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of the association for physical and mental rehabilitation

CORRECTIVE THERAPY

SEPTEMBER—OCTOBER, 1960

VOL. 14, NO. 5

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THE JOURNAL OF THE ASSOCIATION FOR PHYSICAL AND MENTAL REHABILITATION

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HOW TO PRESCRIBE A WHEELCHAIR*

ROY H. NYQUIST, M.D.**
ERNEST BORS, M.D.**

Introduction

The purpose of this article is to present to the profession at large and to those engaged in activities of Physical Medicine and Rehabilitation, the experience with the individual prescription of wheelchairs which we have had at the Spinal Cord Injury Center, Veterans Administration Hospital, Long Beach, California in the past nine years.

The foundation for this experience was laid when a regular weekly wheelchair conference was activated in 1951 in order to prescribe new individual wheelchairs and to repair and modify older wheelchairs as necessary.

Wheelchair Conference

Our wheelchair conference is under the direction of one of the writers (R. H. N.) and includes the wheelchair technician of the Orthopedic Brace Shop, the Chief of Corrective Therapy, the eligibility clerk of the Registrar's Office and a secretary. Each patient is presented, measured, his individual needs are evaluated and prescriptions are accordingly made.

Inasmuch as the number of patients who are mobilized by modern folding wheelchairs is increasing, and due to the fact that many improvements have been made in various aspects of wheelchairs, the prescribing physician, the wheelchair technician and the corrective therapist must keep abreast of current changes.

While it is mandatory that a physician prescribe any type of therapy, drugs or otherwise, and while it is accepted that prosthetic appliances are prescribed and checked upon delivery by a physician, the individual prescription of wheelchairs apparently has not been practiced; yet the wheelchair is the most important orthopedic appliance for all those whose physiologic way of locomotion has been either completely abolished or severely impaired by loss of function or physical loss of limbs. This idea is not new and we have advocated such procedure for some time (1).

The justification for the presence of the individual team members in the wheelchair conference is as follows: Medical conditions often require special features incorporated into wheelchairs. These conditions require evaluation by a physician in order to prevent psychological resistance which nullifies the desired goal, namely, to fill the patient's needs as well as possible.

A corrective therapist or physical therapist, entrusted with training the patient in his activities connected with daily living, should also be a member of the conference. This therapist is able to assess the needs of the patient in regard to the use of a suited wheelchair for the above mentioned activities.

A wheelchair technician, as a member of the conference, supplies precisely the correct nomenclature of the technical and mechanical parts and features, and the knowledge of what is technically feasible. Furthermore, he is responsible for the checking of all new wheelchairs on delivery from the factory in respect to their compliance with the purchase order.

The prosthetic clerk of the Registrar's Office is a necessary member of the conference within the framework of the Veterans Administration because he is responsible for the administrative phase, which includes the patient's eligibility and processing prior to repair an old or ordering a new wheelchair.

Finally, a secretary is necessary to prepare the required forms of the Veterans Administration which are involved in procuring repairs or orders of about ten wheelchairs weekly, most of which serve the patients on the large Spinal Cord Injury Service of this 1500-bed hospital.

General Principles

The modern folding wheelchair is very different from the old non-folding type of the 1930's. For patients with spinal cord injuries who will cover over 90% of their movements by wheelchair ambulation, the chair must be strong enough to operate on the average of at least 35 miles per week. It must be of sufficient size for the patient's hips and back, yet not any wider than necessary so that narrow doorways can be passed, and not any longer than necessary so that it can be turned in as small an area as possible. Easy folding and unfolding is required when the patient moves the chair in and out of an automobile.

---

*Presented at Joint Clinical Session, Tri-Organizational Conference, June 14, 1960, Santa Monica, Calif.

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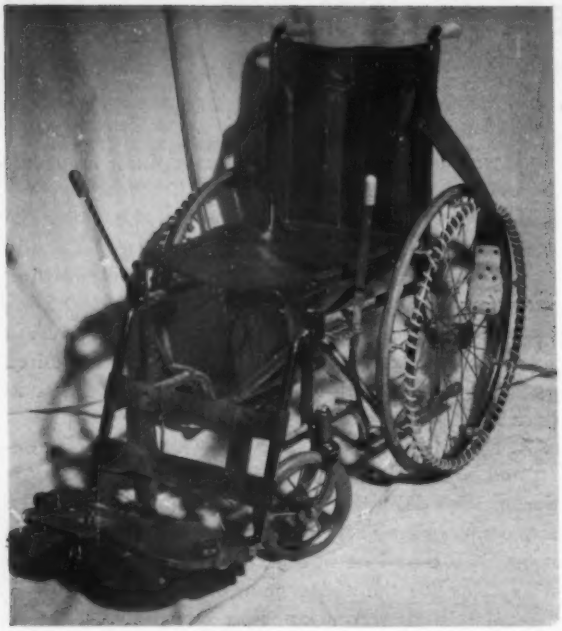

FIG. 1

Note method of insertion of 1" thick sponge rubber padding with two strips each 4" wide, leaving a space 1½" wide in the center to allow easy folding of the back upholstery when folding the chair. Also, note heavy duty brakes, brake handle extensions, wide hand rim spacers, hand rim wrappings, heavy duty axle, safety belt and large No. 2 pedals.

This is facilitated by rust-resistant chromium-plating of the inside rods on which the X-frame folds.

In view of the stress and strain on spokes and axles when the wheelchair is placed behind a movable front car seat, or when it is used to negotiate curbs, we have found that 36 spoke wheels are preferable to 28 spoke wheels, that the ⅝" diameter axle does not bend and break as does the standard 7/16" diameter axle, and that 120 gauge spokes are much stronger than 105 gauge spokes which need frequent repair.

Patients with high cervical cord lesions who have very little movement in their trunk muscles and those with limited range of motion at the hip joints sometimes need a chair with semi-reclining or full-reclining back. In order to increase the strength of the top edge of the back upholstery it is worthwhile to insert a two inch wide reinforcing web strap. For patients with painful backs, two strips of one inch thick sponge rubber padding, four inches wide, can be inserted between the front and back layers of the naugehyde back upholstery, leaving a space about one inch wide in the center without padding, so that the upholstery folds with the wheelchair (Fig. 1).

Size of Patient

Patients who are over 5'8" in height, with hips 16" to 18" wide, or with backs 16" to 18" wide at the axillae, fit well into a standard size wheelchair. The width of the standard wheelchair upholstery is 18", and if removable arm-rests are installed on the chair, an extra inch is available at each side of the seat. Therefore, if the width of the hips and back is not more than 16", a 16" width upholstery will suffice For smaller patients under 5'8" in height, with a width of the hips and back of less than 16", the junior size wheelchair is sufficiently large. For the junior size wheelchair, the upholstery can be ordered from 12" to 16" wide, according to the individual width of the patient's hips and back, and according to whether or not removable or non-removable arms are desired on the wheelchair.

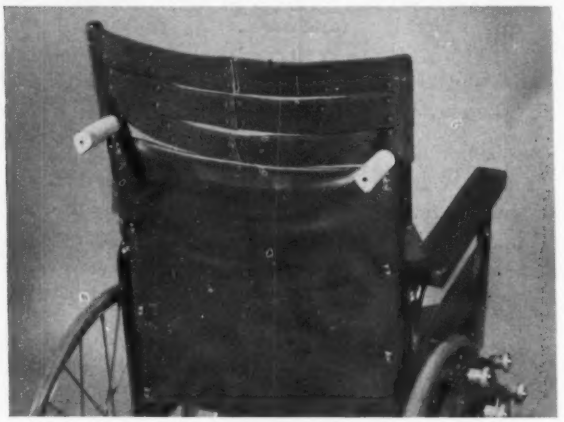

FIG. 2

Note extension bars on outside of upright bars with handles. Also note method of installing web straps. When the need for the extension bar is passed, this is easily removed. The naugehyde covering has been removed for purpose of illustration. See Fig. 6 for design of cover.

Back Extensions

For patients with cervical spinal cord lesions, back extensions are sometimes needed for a period of two to three months as a partial head and neck rest (Fig. 2).

Arm Rests

Removable arm-rests are indicated when a patient has to be lifted in and out of a wheelchair because this avoids accidental trauma to the ischial regions which may be accidentally bruised during these maneuvers. The standard, full length upholstered, arm-rests are desirable for patients with paralyzed arms in order to support the forearm, and hand. For patients with normal arms who will be working at a desk or eating their meals at a table, the upholstered desk-type arms are more convenient. For quadriplegic patients we frequently reverse the upholstered portion of the arm rests, placing the wide portion on the medial aspect, permitting easier access to the hand-rims of the large wheels.

FIG. 3

Shows method of installing heel straps. The top web strap is frequently installed on the bar parallel with the floor instead of as shown. Occasionally, a third web strap is needed either below or above the straps shown. Also shown are the larger No. 2 pedals and the 8" front caster wheel. Note heavy duty brake and brake ratchet.

Leg Rests

For patients with poor circulation, edema, or ulcerations of the lower extremities, adjustable and removable leg rests are provided for elevation of the limbs; leg rests and pedal panels are furnished with padding. For patients with double lower extremity amputations, removable, adjustable, swinging leg rests are needed, if the patients are fitted with bilateral lower extremity prostheses. When required for only short periods, we attach the Lahay adjustable leg extension support.

Pedals

For patients whose shoes are under size 10, the standard No. 1 pedal usually suffices. For patients whose shoes are over 10 in size, the No. 2 pedal is more desirable, in order to prevent the feet from sliding off the pedals into a drop-foot position. Special plates and knobs are sometimes attached to help keep spastic feet in place.

Heel Straps

Heel straps prevent the heels from striking the small wheels as they rotate. A double-web H-type strap is preferable to single heel straps, and the top web strap is preferably placed across the horizontal bar (Fig. 3).

Wheels

In most cases it is prefarable, e.g., when negotiating a curb, to have the large hand-propelled wheels in the back of the wheelchair and the smaller turning wheels in the front of the wheelchair. The small front wheels are available in the five-inch size and in the eight-inch size. The five-inch size disc wheels are more durable than the eight-inch spoke wheels. However, the eight-inch wheels are more easily propelled over the edges of rugs and door thresholds.

One-Arm Drives

One-arm drives are used for patients who can propel the wheelchair with only one arm. They are now equipped with an X-type flexible axle so that the axle does not have to be removed when the wheelchair is folded up (Fig. 4).

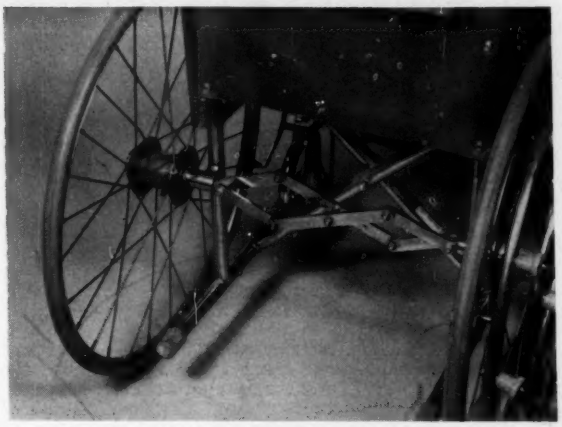

FIG. 4

Illustrates the X-type flexible axle for one-arm drives. This axle does not have to be removed each time the wheelchair is folded as did the old type axle. Also note hand rim knobs made from rubber front bumpers.

Hand Rims

For quadriplegic patients additional friction is provided at the hand rims by installing nine wide hand rim spacers instead of the standard hand rim spacers. The wide spacers are 1¼" in length, whereas the narrow spacers are ¾" in length.

In order to strengthen the rims of the large wheels, nine narrow hand-rim spacers can be installed instead of the usual four. By strengthening the rim of the wheel, less torque is placed on the spokes, resulting in less broken spokes and less faulty alignment of the wheels.

If additional friction is needed for patients with cervical spinal cord lesions, the hand rims are either wrapped with insulated electrical wire, or, rubber knobs made from front bumpers, are installed on the hand rims. Rubber tubing and adhesive tape are also used to give additional friction.

Tires

The standard tires are now gray rubber which do not mark up the floors as did the older type black rubber tires. Racing bicycle tires with inner tubes

FIG. 5

Shows the manner in which the heavy duty axle is welded to the front of the rear post. This type of rear post is known as the "amputee frame type." For amputees the axle is welded to the rear of the bent portion making it more diff.cult to tip the chair backward. Also note method of installing soft rubber tubing on hand rim, installation of heel strap with the top web strap on the bar parallel with the floor, 4" sponge rubber seat cushion, and desk-type, upholstered, removable arm rests.

are frequently desired. They require special rims and frequent checking of air pressure to maintain the same pressure in both tires so that the wheels run straight. Tires are easily punctured in factories where iron filings are on the floor, and they require considerable work and time in repair. These tires are, therefore, not recommended in such a special case.

Axles

Special mounting of heavy-duty axles (⅝" in diameter) in front of the bent rear post of the wheelchair puts the rear wheels within easy reach and improves the weight distribution on the front wheels so that the wheelchair steers more easily (Fig. 5).

Patients with amputations of the lower extremities require a differently balanced wheelchair which must not tip backwards; therefore the axle is specially mounted behind the rear post of the wheelchair.

Brakes

Good brakes are essential when the patient gets in or out of the wheelchair. It is safer to set the brakes than to leave the wheelchair in a free-rolling condition, in order to avoid falls and fractures. The average wheelchair brake is very poor in strength but heavy-duty brakes, made out of brace steel are available, and when used, materially reduce the cost of brake repairs. For patients with partially paralyzed arms, extensions for the brake handles are available when needed.

FIG. 6

Illustrates installation of safety belt. Also note method of installing upholstery on back extension and the use of front rubber bumpers as knobs on hand rims of one-arm drive. The 11 knobs on the small rim have the center bolt parallel with the floor, and the 13 knobs on the larger rim are angled at 20 to 30 degrees to the floor.

Safety Belts

Safety belts should be installed on wheelchairs for amputees, hemiplegics, patients with high level spinal cord injuries and generally for any patient with neurterior poliomyelitis and multiple sclerosis.

Wheelchair seat cushions for patients with spinal cord injury, or others without sensation in the buttocks should be 4" thick, of individual width and length, in an attempt to prevent pressure sores (Fig. 6).

Summary

We have presented the functions of the individual members of a team which confers weekly on problems related to wheelchairs.

The members of the wheelchair conference attend to all problems in regard to the repair of old chairs and to the ordering of new chairs according to the need of the individual case.

The prescription of a wheelchair is described in detail pertaining to all parts of a wheelchair.

It is hoped that the ideas presented in this study will enhance the exchange of fundamental knowledge

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NEW HORIZONS IN REHABILITATION OF THE EPILEPTIC*

FRANK RISCH, Ph.D.**

I would like to present to you an action program in epilepsy—a program which had its origin in uncertainty and its purpose in a determined resolve to do something tangible for the epileptic. It has traveled a rough course but the payoff has been human restoration.

The problems in rehabilitation of persons with epilepsy differ in many respects from those encountered with physical handicaps of other types. For one thing, there is a lack of agreement within the medical and paramedical professions concerning definition and diagnosis of the condition. For another, the public is considerably confused by much misinformation and little correct information. Despite present day advances in epilepsy and the availability of good medical treatment, many people still think of the affliction as a "taint" and believe it to be associated with insanity and intellectual deficiency.

Perhaps a few short definitions would make epilepsy more understandable. It is a condition in which there are repeated episodes of disturbance in consciousness, and these episodes vary in form and in severity. Some spells are only momentary lapses while others are severe generalized convulsions. It has nothing to do with insanity; it does not slow the victim mentally; it is neither hereditary nor contagious; it does not cause the brain to deteriorate nor incline the epileptic to rages or strange behaviour; and seizures do not tend to become more violent as time passes. On the contrary, they tend to diminish in number and in intensity.

Seizures are manifestations of a brief disturbance in the functioning of the brain, which very often is the result of an old forgotten or unknown injury, or the residuals of a childhood infectious disease. One of the peculiarities of epilepsy is that the victim may be entirely normal in appearance, manner, ability and intelligence between seizures. The suddenness with which the attack comes and the helplessness felt by those nearby, add to the mystery of the condition. Fear is the most prevalent reaction of all concerned, particularly of those witnessing the seizure.

School authorities, employers, and fellow workers generally are not too understanding of the epileptic. Ignorance and fear arouse adverse feelings. Children with epilepsy are commonly sent home from school after an attack and frequently they are excluded from regular public school classes. Family feelings of shame and guilt make a bad situation worse. The young person who has a seizure while at work may lose his job and a long hard road of having to lie about his condition is begun, if any work is to be had at all. Capability, desire and motivation for work are not the measures. The adult who has supported his family finds after developing epilepsy, that life can be very grim. Discrimination and enforced dependence lead to lack of confidence and often to increased difficulty in controlling his seizures.

Because of the large number of persons with epilepsy—it is estimated that there are now one and one-half million in the United States, with 50,000 veterans on the rolls of the Veterans Administration—a pilot study in employment of hospitalized veterans was undertaken by the Veterans Administration in the year 1948. This was an experimental workshop designed to determine the beneficial effects of steady, gainful employment on the control of seizures, and to further promote the economic rehabilitation of the epileptic.

In both of these aspects, the Veterans Administration found the results to have been more than encouraging. The shops operate through contracts with private commercial firms of the community, operations simulating prevailing job practices in industry, employment is voluntary and placement is eagerly desired by the patients.

The success of this endeavor not only assured its continuation but also served as a stimulus for establishing comparable shops in other Veterans Administration facilities as well as the initiation of workshops in the community for all persons, veteran and non-veteran, unemployed because of epilepsy.

Epi-Hab L.A., Inc., which began operation in 1956 and is the outgrowth of the Veterans Administration experiment, has received financial and gratuitous professional support from the Office of Vocational Rehabilitation, Washington, D.C., from private contributions, and from a variety of community organizations. It stands for epilepsy rehabilitation and is a non-profit corporation chartered under the state non-profit laws. In appearance it looks pretty much like any other small machine shop. There are the usual array of drill presses, band saws, shears, pneumatic riveting machines and other medium power tools. Safety devices are just about standard for this type of operation, but the shop does have one notable distinction—its fifty employees are all epileptics.

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What about its safety performance? I am happy to report that it's been good enough to earn a 20% discount on its Workman's Compensation Insurance premiums and a Safety Plaque from the Pacific Employers Insurance Company for two consecutive years for outstanding safety performance. As I look back through the years, I can recall my early personal fears and reaction to the risks, and I too had some doubts in allowing the epileptic to work with basic shop tools.

These early fears led us to encase our drill presses in plastic shields and padding to the point that they were hardly identifiable as drill presses. Other tools similarly were shielded and padded to protect the worker. Today, at the Epi-Hab shops such extraneous and costly shieldings have been eliminated. The work benches, the concrete floor, the brick walls, the tools and the motor-driven machines are all conventional as are the standard safety guards.

Ordinarily, factual information on the employment of the epileptic, his incidence of seizures on the job, his risk as a worker from the standpoint of industrial accidents, his capacity for productivity, and a host of other characteristics concerning his performance has come to us primarily through casual untested opinions. Here, for the first time, Epi-Hab can be looked upon as an actual laboratory where data is gathered in a scientific manner and where the statistics represent actual performance values gathered over a number of years.

Now let us look at the social regeneration which occurs to an epileptic when he is given an opportunity to be gainfully employed where he does not have to fear the loss of his job in the event of a seizure.

It goes without saying that a healthy competitive spirit is a valuable asset to any individual regardless of whether he is at work or at the playground. At Epi-Hab, athletics are stressed. Over the years baseball and bowling teams comprising Epi-Hab employees have been company policy and have appeared in competition with other industrial teams in community leagues. Perhaps it can be said that the first epileptic baseball team was seen by an unsuspecting audience who soon learned that there need be no fear of the epileptic on the field. For that matter, he performed no differently playing baseball than the members of the other teams. A seizure on the field was treated no differently than an upset to a player struck by a wild pitch.

Improvement in skills and knowledge is another objective of the Epi-Hab organization. In this regard, the Los Angeles Board of Education was asked to sponsor courses in electronic theory for the Epi-Hab employees and to grant certification for completion of the courses.

Epi-Hab has become an integral part of the community and participates with other firms in contributing to human welfare by supporting the Community Chest. For that matter, Epi-Hab has been the recipient of three consecutive bronze plaque awards for its leadership in contributions, a record unexcelled by the thousands of companies doing business in Los Angeles.

Because of the widespread dissemination of information concerning the Epi-Hab project through the many communication mediums, radio, newspapers, magazines, T.V., motion pictures, lectures, and newspapers, the development of Epi-Habs in other states and in a number of foreign countries is in process. Epilepsy is a universal problem, and employment is a universal need. At present, there are Epi-Habs located in Los Angeles, Phoenix and Long Island, and cooperating Epilepsy Rehabilitation Workshops in the Veterans Administration hospitals at Los Angeles and Northport, Long Island.

Perhaps the following highlights of the total Epi-Hab operation will suggest the importance of its contribution to society. During the past four years, over 1000 applicants have been referred to Epi-Habs. In excess of 400 have been employed by the Epi-Habs. These employees earned over $1,000,000 and paid over $100,000 in taxes. The Epi-Habs have sub-contracted over 475,000 man-hours of work from a variety of industrial establishments including aircraft, electronic, metal, woodworking, toy, plastic, hardware, and others. Over 1000 generalized seizures have occurred with but 425 man hours lost due to seizures, or approximately one hour for every 1000 man hours worked. The seizures cost Epi-Hab less than a coffee break. Slightly over 100 industrial accidents have occurred at the Epi-Habs, 25% of which have been associated with seizures, and 75% for the usual reasons.

A survey of the Epi-Hab employees' earnings before coming to Epi-Hab and their period of earnings at Epi-Hab, shows a ten-fold increase during Epi-Hab employment. Approximately 95 Epi-Hab employees have been placed in private industry. This represents 25% of the Epi-Hab labor force placed with other companies, the ultimate objective of the Epi-Hab project.

Epi-Hab's performance to date has convinced many unknowing cynics who had grave doubts that epileptics, particularly in so large a group, could be so productive as the results have indicated.

These achievements, however, have not occurred without considerable sacrifice and hardships, the most severe problem being the acquisition of satisfactory continuous sub-contracts. Epi-Hab, although originally subsidized, is now on its own. In order to fulfill its objectives and to demonstrate the feasibility of self-support, the community of industry must give it active participation. I would guess that putting peo-

ple into a productive capacity so that they can shoulder some of the tax burden is a wise and effective approach toward spreading tax responsibility. And, I am certain that all of us are interested in sharing this burden.

Another major objective, previously mentioned, which is inherent in the Epi-Hab concept, is to graduate its employees into private industry. This is no easy matter. Perhaps it would be of value to discuss this challenging task in some detail. The question that comes to mind in introducing this subject is "What is the attitude and practice of industry in the hiring of the epileptic? To answer this question one must first define the term industry. Actually how do we interpret the generic term, industry? Do we mean the president of a company, or the personnel officer, or the office manager, or the medical director, or the supervisor, or the shop foreman, or do we mean that the lead man is synonymous with the term? There is considerable confusion in determining the responsible identification when it comes to establishing who is for or against the employment of the epileptic in the industrial organization.

Furthermore, the attitudes and practices of these people vary within a company as well as between companies. The attitudes and practices also are contingent on the condition of the economy—whether it is a tight labor market or whether there is an over supply of labor. What's more, we can perhaps classify the factors which underlie the hiring of the epileptic into a few basic categories; that is, the size of the company, whether the firm does pre-employment physical examinations through its own medical department or through a contract medical service, whether the firm has had previous experience with the hiring of disabled people or continues in employment those people who have become disabled while employed in the company.

In our competitive industrial culture, the profit motive and the drive for achievement and status thereof must be reckoned with and where these are uppermost in importance and where moral obligations to society are but minimal, employing the disabled, and in this case the epileptic, becomes highly questionable.

In reporting the attitudes of industry I will try to cover the topic from Epi-Hab's experience in dealing with the management team in industry relative to the hiring of the epileptic. Perhaps we should rephrase our question to read "What is industry's concept of the epileptic as a worker?" In a survey of a large number of industrial establishments done as a part of a doctoral dissertation* a questionnaire was mailed out to five hundred Arizona companies with the following cover letter:

A survey is being conducted in order to determine the present concept of the epileptic in industry. Your company has been selected to participate in this survey (anonymously) on the basis of its past support, either directly (production sub-contracts) or indirectly (utilization of components partially fabricated by Epi-Hab), which contributed to the success of our work training, employment, and placement program. The information received will be compiled, tabulated and then utilized to better guide and counsel our epileptic trainees and employees.

Will you please take a few minutes of your time to make an additional contribution by filling out the enclosed two-page questionnaire check sheet and mail it back at your earliest convenience (by February 29th, if at all possible) in the enclosed stamped, self-addressed envelope?

The questionnaire itself contained many items pertinent to the hiring and firing policies of a company.

The 500 manufacturers used for the mailing were listed in the Arizona Directory of Manufacturers, published in January, 1960, and as the cover letter indicates, they were assured of anonymity.

Some 314 companies out of the 500 or so (65%) responded to the survey. The products they manufactured covered such diversified areas as food processing (bakery, beverage, dairy, meat), clay and concrete products, printing and publishing, wood and metal products, electronics, aircraft parts, etc. These companies employed a total of 64,811 people. Only 59 were known epileptics or less than 0.1%. Of the 314 companies responding to the survey, only 12 presently employ epileptics (4%), and 11 reported they had employed a total of 35 during the past ten years but did not presently have any in their employ.

When queried as to the company's policy regarding the hiring of epileptics, only 12 companies reported they had no restrictions. Of those reporting they hired, but with restrictions, 36 stated they would hire with certain limitations (only if fully controlled in non-dangerous work). Over 73% of those companies who responded to the survey emphatically stated that they would not knowingly hire an epileptic. Of those who stated that they would not knowingly hire an epileptic, 25% stated that he would be discharged as soon as it became known that they had hired one. An additional 22% stated that the epileptic would be discharged only if he had a seizure.

When asked the reasons for not hiring an epileptic, 58% expressed a fear that the epileptic would hurt himself, and an additional 23% feared that he might injure others. It is interesting to note that the majority of the respondents were concerned about the

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*Wolfson, Robert G., A Study of The Effectiveness of Medical Control, Work Training, Employment, and Placement in the Rehabilitation of Epileptic Adults.

SCOPE AND OBJECTIVES OF MEDICAL REHABILITATION

S. F. RADZYMINSKI, M.D.*

The program of rehabilitation means the restoration and readjustment of the disabled, the chronically ill patient, and the aged. The objectives of rehabilitation are to obtain the highest level of functioning and self-sufficiency within the limits of the patient's physical and mental capacity. Every major illness or injury is a disability, which may be temporary or permanent, depending on the outcome. Following the short term illnesses, or an uncomplicated injury, a patient usually has an uneventful recovery and returns to his usual way of living and working. When the patient loses an eye or limb, has heart disease, tuberculosis, diabetes or history of mental illness, or suffers a stroke, he may be permanently disabled so that he may not resume his former way of life or occupation. All patients who have a disability, either physical, mental or advancing old age, should be evaluated periodically, to give them the benefit of the rehabilitation services that are available in a given community or institution.

The important feature in the rehabilitation of the patient is a consideration of not only his heart, his injured limb, his stomach or his mental illness, but a consideration of the total person. Similarly, his adjustment to himself, his family, his job, and the community should be considered.

Rehabilitation is a team work process and cannot be accomplished successfully by any one physician or rehabilitation worker. It concerns the physician in charge of the patient and other necessary medical specialists, the surgeon, the internist, the psychiatrist and the psychologist. It also requires the assistance of the nurse, the rehabilitation therapist, social work service representative and vocational counseling representative. Other auxiliary services and community resources may also be required to complete this process.

Types of Disabilities

Disabilities may be classified into several types according to causes and involvement of different systems of the body:

1. Neuromuscular: hemiplegia, paraplegia, multiple sclerosis, cerebral palsy, Parkinson's disease, residuals of poliomyelitis, and others.
2. Cardiovascular: diseases of the heart and blood vessels.
3. Psychiatric diseases: psychoses and psychoneuroses, neuroses, alcoholism, and others.
4. Orthopedic conditions: fractures, amputations, bone and joint deformities.
5. Lung diseases: tuberculosis, asthma and emphysema, tumors, bronchiectasis, and post-operative conditions.
6. Glandular diseases: arthritis, diabetes and obesity, and others.
7. Blindness: partial—total
8. Deafness: partial—total
9. Aphasia and other speech defects.
10. A combination of one or more of above disabilities.
11. Old age, which is a form of disability and may include many minor or major defects, *i.e.,* poor eyesight, poor hearing, arthritis, weak heart, general weakness and mental deterioration.

Disabilities are also classified as to progress: They may be:

1. Stationary or static: residuals of polio, amputations, or satisfactorily healed fractures.
2. Improving: tuberculosis, orthopedic cases, certain neurologic conditions.
3. Progressively worse: multiple sclerosis, arthritis, asthma, emphysema, heart disease, and other chronic diseases.

The Aged a Special Problem

The rehabilitation and care of the aged and the chronically ill is a major problem in this century, due to the ever increasing span of life. In the year 2000 it may be 75-80. At the present time life expectancy is about 69 years. In 1900 the span of life was 49. It will continue to increase in the future because of better medical care, better living conditions, and nutrition. According to the late Dr. Edward J. Stieglitz, a specialist in gerontology, the age limit of every individual could be between 100-120 years, if there were no intervening illnesses or injuries during the person's life He states illness, and not age, damages the brain, heart, and other organs of the body.

The most significant diseases of the aged and chronically ill are:

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1. Cardiovascular diseases: arteriosclerosis, hypertension which leads to strokes and coronary heart diseases and mental deterioration.
2. Metabolic diseases: diabetes, thyroid diseases, gout, and arthritis.
3. Malignancies of various types.

Objectives in Rehabilitation

In general the objective for every disabled or chronically ill and aged person is to make him self-sufficient and independent to the highest degree within the limits of his capability. Since there are many types and degrees of disabilities, a different objective must be established for each patient undergoing rehabilitation. The following outline may be used as a guide in goals in rehabilitation.

1. The return of patients to the same occupation and same mode of living. *Example:* A clerk or office worker who lost a leg was able to return to the same job.
2. Training for a new occupation and mode of living. *Example:* A young hemiplegic, formerly a tree surgeon, was trained to be a bookkeeper.
3. Work in a sheltered work shop or an institution in case of patients who are slow in their work and not able to compete with others in industry nor do a full day's work on the outside. *Example:* A domiciliary member with heart disease, an excellent photographer, became a member-employee in VA domiciliary where he is happy in his job and fills a definite need.
4. The Home-Bound Program where a patient may work at home, either in rendering services or producing some product for sale. *Example:* A disabled Navy airman, with resultant quadriparesis, speech difficulty and some mental deficit, is learning rug weaving through the VA and a local teacher's college. He will set up a work shop at home to augment his pension.
5. Living at home, or in a suitable home, may be recommended for a patient who is not employable, but who is self-sufficient and no longer needs hospital, nursing or attendant care. Such a patient should have something to occupy his time in hobbies and other worthwhile satisfying activities.
6. Living at home or in institution may be suggested for the severely disabled patient who requires constant nursing and attendant care.

It must be noted that many disabilities are not static but may change with time according to the progress of the illness. Some handicaps and diseases may improve—others may become worse. Some disabilities may remain stationary for a given time. Consequently patients with disabilities should be examined and re-evaluated periodically to set up new programs of medical care, physical activities and new goals in rehabilitation.

Techniques in Rehabilitation

In the Veterans Administration a definite program of rehabilitation has been established since WWII, under guidance of Physical Medicine and Rehabilitation Service headed by a physiatrist and a staff of therapists trained in rehabilitation. Making full use of Clinical Psychology, Vocational Counseling, and Social Work Service, the following techniques or methods of rehabilitation are applied generally in the rehabilitation of hospital patients and domiciliary members:

1. Complete evaluation of the disability with recommendations and referral to other medical specialists to evaluate, correct or improve the existing medical, surgical, or psychiatric conditions.
2. A tentative goal or rehabilitation objective is set up as a basis for future planning; what the patient will be able to do, where he will live are considered.
3. A full program of rehabilitation is set up in the PM&R Service to improve strength and coordination, walking, speech, mental attitudes, and pre-vocational exploration. Special emphasis is placed on activities of daily living.
4. Vocational Counseling: Patients with vocational problems are referred to Vocational Counseling Service for evaluation, guidance, assistance, and pre-vocational exploration, retraining and placement after discharge, if feasible.
5. Referrals are made to Clinical Psychology of the patients with emotional disorders.
6. Referrals to Social Work Service for exploration of home, family, and financial problems.
7. Procurement of prosthetic devices, artificial teeth, braces, hearing aids, glasses and other assistive devices.
8. Frequent evaluation of patient's progress with necessary changes in treatment and objectives when indicated.
9. A staff meeting or Medical Rehabilitation Board is held on more difficult cases with the following members: Chief, PM&R Service, Staff Physician, Social Work Service representative, Clinical Psychologist, and other personnel involved in patient's rehabilitation. The board makes decisions and recommendations for goals in rehabilitation and plans for final disposition.

Vocational Rehabilitation, of course, is the highest goal to which the patient can aspire. The magic word "work" brings many blessings, *i.e.*, money, independ-

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THE REHABILITATION OPPORTUNITIES IN INDUSTRIAL MEDICINE*

FRANCIS G. ST. LOUIS**

History of Industrial Medicine

Not too many years ago, industry began to realize the terrific expense of employee lost time, whether due to sickness, injury off the job, or injury on the job. Prior to the full realization of the economic loss, industrial medical care consisted primarily of the minimal care necessary to conform with legal and moral obligations of the employer. However, when industry realized the great financial loss inherent with lost time it attacked the problem in many ways:

The first thing industry did was to obtain the services of "plant physicians." Usually, they were on a part-time basis, and their work consisted mainly of examining and treating patients who had been hurt on the job. They usually were general physicians from the community, primarily interested in medicine in its entirety and in industrial medicine only secondarily. Even on this basis it became apparent to industry that there was great value in many ways to be gained by them, by the prompt, early care of industrial injuries, and the morale factor that was realized from indicating to the employees interest in their health and well-being.

As soon as industry realized the economic and morale value of providing adequate medical care for industrial injuries, there was a rapid step ahead, in the usual American way, to provide complete medical care, not only for the industrial injuries of employees, but also to provide in some way or another adequate medical care for employees and their families. One of the leaders in this field, of course, was the Ford Motor Company; the Ford Hospital, the Ford Health Plans and the Ford Foundation are well known because of ological disease and poor trunk balance, such as anthe publicity that they have received during the last several years and because of the leadership that they have taken in this field.

The steps that have been taken and the routes that have been travelled with the objective of keeping the employee in top physical condition so that he can stay on the job the maximum amount of time, have been many, and at times, difficult ones:

Initially (it seems a long time now) the patients objected to this interest, and the regimentation that occurred in industry. They were asked to report every industrial injury and to go to the Plant First Aid Unit or Hospital for care, no matter how small or insignificant the injury might seem. Today, through educational and safety programs, the worker knows that his employer is interested in him and that this interest comes because he is important to the operations of the plant. He knows that to lose time from work results in increased expense for his employer as well as loss of income for himself and that his ability to be well and on the job is of primary interest to his employer as well as to himself.

In the early days of industrial medicine there were objections from many of the physicians in the community regarding this type of work. Many of the injuries were of a very minor nature, and the physicians felt that they did not want to take time from their busy practices to do industrial work. Furthermore, they frequently resented the doctor in the community who spent part of his day doing industrial medicine and part of his day in private practice in the community. Some felt that this was unfair because it provided the physician with an opportunity to contact patients and build up his private practice at their expense. This objection has been met in a number of ways.

Finally, the insurance companies interested in maintaining as low as possible experience rates, were also reluctant to provide any extra items of medical care that they felt might be avoided.

Some of the Methods that Have Been Used in Handling the Problems

1. Employee objections to care have been overcome in a number of ways. Legally, employees know that if they do not report injuries early they jeopardize the possibility of collecting disability benefits, if a disability results from an injury.

2. Employees suffer loss of income. In most cases there is a time period before disability payments commence. In most cases payments are less than the employee would make if he were on the job.

3. The quality of care that the patients now receive has probably been the biggest reason for their acceptance to immediate and enthusiastic acceptance of treatment.

4. The insurance companies who are now writing many of the checks for industrial medical care at first

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assumed the "show me" attitude regarding any unusual phases of medical treatment. This was true as far as physical medicine was concerned. That's exactly what was done in case after case where the physician gave an estimated period of disability; the Physical Medicine Departments proceeded to beat the schedule and get the man back on the job, days, weeks, and sometimes months ahead of the estimate. Insurance companies are now well aware of the progress that is being made in this field. At least this is true as far as physiotherapy is concerned. Some of the companies are also aware of the complete physical medicine and rehabilitation picture that the physiatrist and the corrective therapist have opened up to assist in returning the injured employee to the job in the shortest possible time and in the very best possible condition. However, the presentation of this complete program of physical medicine and rehabilitation to the employer and to the insurance companies is in its very earliest stages at the present time. The coordination corrective therapist and the physiatrist are at this particular moment on the threshold of great recognition of the overall picture of complete rehabilitation for the industrial injured. The problem today, except in financially supported programs, is to justify the additional expense of providing the personnel, equipment, and space to provide these additional services for rehabilitation. Most managers today are operating on a strict budget and are finding more difficulty from day to day to hold operating expenses down. They must, therefore, be able to utilize these facilities for many purposes as well as industrial medicine to justify the incorporation of the complete department in the clinic. It is in this area that the corrective therapist is of most value to administration. His training, initiative and his ability to coordinate the various activities are the spark that is necessary to encourage administration to move ahead on programs of this sort. Generally speaking, smaller clinics are unable to provide full-time jobs for all of the personnel that are necessary to provide the complete rehabilitation program. However, arrangements can be made with the personnel who are called on only occasionally to provide the complete picture, such as the vocational therapist, the occupational therapist, the social worker, the psychologist, psychiatrist, or the speech corrective therapist. Clinics will naturally provide opportunities for the personnel who can offer the greatest number of varied skills. The corrective therapist and the physical therapist will probably be the first physical medicine and rehabilitation personnel on the staff of a progressive clinic. However, as the department grows and as the group grows, the additional personnel to provide total patient rehabilitive care will be added to the picture.

It seems to me that with the great advances that are being made in the health field, in the health insurance and industrial medical field, that the time is now right for serious consideration to the opportunities available for corrective therapists in these fields. Your program in out-patient departments and in clinics will have to be planned well so that it will be a self-supporting and even profit making department. This is our democratic method of free enterprise. It is up to the corrective therapist and the physiatrist to plan well their rehabilitation programs so that their foundation will be so strong that they utilize all of their skills to furnish the patient total rehabilitative care.

VA SCIENTISTS WIN EXHIBIT AWARDS

Scientific exhibits by Veterans Administration doctors won seven awards at the American Medical Association's recent meeting in Miami Beach, Fla.

Drs. William Hentel and A. N. Longfield of the VA hospital in Albuquerque, N. Mex., and Drs. Hollis Boren and B. J. Blumenthal of the Houston, Tex., VA hospital were awarded the Billings Bronze Medal for their exhibit, "Pathology of Major Pulmonary Diseases as Demonstrated by Fume Fixation." The Billings Medals are awarded on the basis of excellence of correlation of facts and the visual presentation.

Certificates of Merit, awarded to the most outstanding exhibits in each of the medical specialties represented at the A.M.A. meeting, went to:

Drs. Philip C. Johnson and Gunnar Sevelius of the University of Oklahoma Medical Center and the VA hospital in Oklahoma City, for their exhibit in the Section on Internal Medicine, "The Use of Radioisotopes to Record Myocardial Blood Flow Changes Produced by Coronary Dilators."

Drs. Herman Bernhardt, Joseph M. Young, and Robert Gourley of the Memphis, Tenn., VA hospital, for their exhibit in the Section on Pathology and Physiology, "Cancer Cell Detection by Millipore Technique."

Dr. Alfred Ebel of the Bronx, N. Y., VA hospital, Dr. Nicholas Panin of the East Orange, N. J., VA hospital, and Dr. Milton Holtzman, Welfare Island, N. Y., for their exhibit in the Section on Physical Medicine, "Anatomical Localization of Common Vascular Brain Syndromes."

The exhibit on cancer cell detection by millipore technique also was awarded a Special Certificate of Merit for the excellent medical photography by which the story was told. The award went to Alex Gravesen, chief of the medical illustration service of the Memphis VA hospital, and his coworkers, Peter B. Werner and Howard Murphy.

Honorable mention was given to Dr. Israel E. Kirsch of the Hines, Ill., VA hospital, for his exhibit in the Section on Radiology, "Gastric Ulcer and Cancer-Roentgen Aspects."

The John H. Morrissey Award, made annually by the Urological Section of the A.M.A. for the most outstanding urological exhibit, was awarded to Drs. William L. Parry and Joseph F. Finelli of the Syracuse, N. Y., VA hospital and the State University of New York-Upstate Medical Center in Syracuse, for their exhibit, "Techniques of Partial Nephrectomy."

The VA was represented in 21 of the 290 scientific exhibits presented at the June 13-17 Annual Meeting of the A.M.A. in Miami Beach. Four of the 21 exhibits were designed and constructed, under guidance of the physician-exhibitors, by the visual aids division of VA Central Office in Washington, D. C. Three of these exhibits won four of the awards.

THE ROLE OF WEIGHT LIFTING IN ATHLETICS*

(Report of a Symposium)

WILLIAM R. PIERSON, Ph.D., F.A.C.S.M.**

Introduction

On May 4, 1960 the Southwest Area membership of the American College of Sports Medicine presented a symposium on "The Role of Weight Training in Athletics." The presentation was in conjunction with the Division of Boys' and Men's Athletics, SDAAHPER and took place on the occasion of the silver anniversary convention of the Southwest District, AAHPER, in Phoenix, Arizona. This paper is a report of that symposium.

Dr. Ronald Thomson, Vice President, Boys' and Men's Athletics, opened the program and introduced the panel moderator, Roger K. Burke, Ph.D., of Occidental College. Dr. Burke stated that the program would consist of an examination of three approaches to the problem of weight training in athletics: physiological principles, to be covered by Laurence E. Morehouse, Ph.D., of the University of California at Los Angeles; psychological principles, to be discussed by Philip J. Rasch, Ph.D., of the Los Angeles County Osteopathic Hospital Research Program; and practical programs with a discussion of existing practices by Mr. Gene O'Connell of UCLA. He then introduced Dr. Morehouse.

Physiological Principles

Dr. Morehouse pointed out that the principles he would discuss were developed from empirical observations and from experiments, some of which were controlled and some not. Further work may result in entirely new principles. The first set of physiological principles discussed related to *resistance* or *load,* and may be itemized as follows:

1. Strength limits seem to be largely dependent upon the degree of inhibition which involuntarily limits maximum effort.
2. The dominant factor in strength development is the "overload principle," which states that the stimulus necessary for an increase in muscular strength is an increase in the tension over that previously exerted.
3. Maximum tension must be exerted throughout the entire range of motion if strength of the whole muscle is to be developed.
4. An athlete need not fear that muscle tissue will be injured by maximum effort against resistance.

The second set of principles centered on the *rate* of exercise or movement, and these may be listed as follows:

1. Speed is not constant in a movement since the movement starts from a stationary position and stops at the end of the exercise.
2. If tension is the only stimulus to strength increase, then any means of increasing tension should make a contribution to a strength development program.
3. When the limit in speed of contraction is reached during training, the load is increased until the maximum speed is reduced.

These principles concerning *repetitions* followed:

1. Simple maintenance of strength apparently can be achieved by a periodic single contraction against a load which is in excess of that which the individual normally encounters.
2. If load or rate is progressively increased as strength is improved, ter. lifts appear to be optimal.

Concerning *specificity,* Dr. Morehouse observed:

1. When the objective is power or endurance, load must be reached so that rate and number of repetitions may be increased.
2. To increase power as well as endurance both load and repetitions must be increased.
3. Light work is used for the development of coordination.
4. For weight training to make an effective contribution to sport or other activity performance, the exercises must conform in pattern, rate and repetitions to the performance, with the load being progressively increased as strength is gained.

When *hypertrophy* is the objective of weight training, it is achieved by performing exercises at maximal load. The development of hypertrophy will be limited by dietary protein deficiency, but excessive protein ingestion during training will not accelerate it. A limiting factor in strength development is the *will* to put forth. The degree to which an individual is willing to punish himself may in part explain individual differences in rate of strength development. After a discussion of *techniques* and *schedule,* Dr. Morehouse concluded his portion of the presentation.

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*Publication No. 3, Southwest Area, American College of Sports Medicine.

**College of Osteopathic Physicians and Surgeons, Los Angeles.

Psychological Principles

The second speaker, Dr. Rasch, discussed the psychological aspects of weight training. He noted that it appears that those interested in weight training may be divided into three groups: the competitive weight lifter, the athlete who uses weight training as a training method to improve performance in his sport or specialty, and the body-builders, or "mirror athletes." Concerning this last group, Dr. Rasch cited the studies of Harlow, Henry, Karpovich, and Thune which indicate that the average weight trainer is (a) endeavoring to compensate for feelings of inadequacy; (b) has strong latent homosexual tendencies; (c) is narcissistic; (d) is more hypochondriacal than the average person; (e) is less successful in usual athletic activities than is the average person; and (f) rationalizes his feelings by saying that he trains with the weights as a matter of health. This is not to be construed as an indictment of weight training; only of some weight trainers. Weight training for body building may play a useful role in the schools because it presents a means whereby certain individuals (particularly adolescent youths) with physical inadequacies may achieve some recognition from their peers. However, the athletic coach or physical educator supervising a weight training program should emphasize that such training is a means to an end and not an end in itself.

Practical Aspects

Mr. Gene O'Connell, the final speaker, noted that recently many athletes have turned to weight training, and he postulates that the reason for this is that a 'skill limit" has been reached and that the only way left to improve performances is to increase strength. This is given credence by the record performance of a group of shot putters, all of whom are engaged in weight training. For his discussion Mr. O'Connell availed himself of the following sources of information (a) scientific journals and Master's theses; (b) coaching and training journals; (c) the opinions of coaches and athletes. The scientific journals revealed six systems of weight training:

1. The *De Lorme,* which involves three sets of ten repetitions with the first set at one-half maximum load, the second set at three-quarters maximum and the last at maximum.
2. *The Zinovieff or Oxford Technique* which is the reverse of the De Lorme.
3. The *MacQueen,* a modified Zinovieff.
4. *Circuit Training* wherein stations are set up depending upon the purpose of the training and the objective is to reduce the time needed to complete the circuit of all the stations.
5. *The Hellebrandt,* a pacing system.
6. *The Multipoundage System,* wherein, as fatigue sets in, portions of the load are removed during the exercise.

The use of any of these systems results in an increase in strength and all utilize the "overload principle." Several Master's theses and research reports have compared the effectiveness of various of these systems, and none has been determined to be more so than the others. The coaching journals usually relate weight training to some particular sport, and these may be summarized as follows:

1. Baseball—hitting and throwing are explosive types of activity, therefore the early training is usually of high repetitions and low load, and after a few weeks, high load with few repetitions is emphasized.
2. Basketball—the strength of the shoulder girdle and arms is emphasized along with improvement in jumping ability.
3. Football—over-all body development is stressed with emphasis on explosive leg power for linemen and endurance for backs.
4. Track and field weight events—heavy weight training begins about six weeks before the season starts and lasts until March when it is reduced to three days per week, is further reduced in April to two days per week, and only one day per week in June and July. In track and field weight events, the load should not be too heavy to permit the rapid movements which will develop explosive power.

Most coaches and trainers are in favor of a weight training program, but knowledge of appropriate programs is not readily available. Consequently, some coaches and trainers do not attempt to instruct their athletes in a weight training program and others use the current rehabilitation weight program. The athletes themselves generally use a program which will develop over-all strength with the addition of special exercises which they feel will develop strength in muscle areas peculiar to their specialty.

Mr. O'Connell then discussed the programs of Hal and Phil Connolly, Bill Nieder, Parry O'Brien, Dave Davis, Jerry Carr and Jack Putnam. He concluded with the following general comments:

1. The amount of weight available at most schools is not heavy enough for the high resistance, low repetitions, used by the weight men in field events.
2. For explosive types of activity most programs consist of not over five sets of 5,3,2,1 repetitions.

Cont'd on P. 142

VOCATIONAL REHABILITATION IN THE VETERANS ADMINISTRATION*

T. O KRAABEL**

In the midst of military engagements throughout the world, faced with the necessity of defending her own shores and of mounting an offense on many fronts, our country took time out to make possible a useful future for those servicemen who had been disabled in the very early days of World War II. On March 24, 1943, more than a year before America was prepared to land her first troops on the Normandy beachhead, the 78th Congress enacted Public Law 16 giving the Administrator of Veterans' Affairs "the power and duty to prescribe and provide" such vocational rehabilitation as will restore the disabled veteran to employment consistent with the degree of disablement.

Lessons learned from the World War I Vocational Rehabilitation Program have been put to good use in our present program. It was decided early that scientifically based vocational counseling would be made an integral part of the rehabilitation program. With the advent of the G. I. Bill, this service was made available on request to veterans seeking readjustment training. With trained psychological personnel in short supply, we turned to educational institutions for assistance with our task. VA guidance centers were established at 415 colleges and universities in the course of the program. They provided vocational counseling in accordance with standards established by the VA to two and a quarter million of the approximately three million veterans who received such service. These guidance centers supplemented the work of VA counselors and made possible the providing of systematic vocational counseling to more than 50,000 veterans per month during the peak of the World War II program in 1947. Vocational counseling is currently being provided all applicants for War Orphans Educational Assistance, as well as to veterans.

Counseling service provides guidance in the selection of an occupational goal suited to the interests, aptitudes and capacities of the individual. Also, when personal problems interfere with equable vocational adjustment, assistance is given in attaining emotional stability and in learning to obtain and hold employment. Each veteran is counseled as a person in accordance with his needs and is encouraged to consider fully and carefully all factors which may affect the accomplishment of his occupational adjustment. The role of the counselor is to provide an atmosphere in which the counselee will feel free and be encouraged to explore and work through his vocational problems with maximum effectiveness. Using the psychological skills, the technical knowledge and specialized information at his command, the counselor helps the counselee to develop understanding and attitudes leading to realistic plans for achieving suitable educational and occupational goals.

Public Law 16 gave the Administrator authority to provide vocational rehabilitation training to disabled veterans through whatever means he determined appropriate. He could, if he found it advisable, set up vocational rehabilitation training programs and operate them. As you know, the Veterans Administration did operate some schools of vocational rehabilitation for disabled veterans of World War VI. In 1943, however, we adopted the policy of using existing facilities and assisting in expanding others needed to carry out the purpose of the law. Only if the necessary services could not be provided by other agencies and individuals, were we to institute actual courses of vocational rehabilitation. Seventeen years of experience have proven this to be a wise policy. It has not been necessary for us to operate schools or to use VA personnel to provide vocational rehabilitation courses to the disabled veterans of World War II or the Korean Conflict.

Most of the veterans who, through counseling, selected programs in the professions were able to pursue their courses in the regular universities and colleges of the country. Also, for objectives in the field of business, schools of this type were available. Veterans entered standard apprenticeships and sound programs of on-job training immediately upon their release from the service, provided their disabilities were not so handicapping they could not pursue these courses.

For those veterans who selected on-farm training there was the problem of determining the adequacy of the farm, preparing, with the veteran, a farm and home plan and finding an instructor. Sometimes this meant a contract with a school system which had on its staff vocational agriculture teachers. At other times it meant locating individuals who were qualified to give on-farm instruction.

*Presented at the Tri-Organizational Conference, Santa Monica, Calif., June, 1960.

**Director, Vocational Rehabilitation and Education Service, Veterans Administration.

For some veterans, however, no programs were available. The real challenge to the Veterans Administration, to the veteran, and to those concerned in his welfare presented itself in the person of the seriously disabled veteran who could not undertake vocational rehabilitation in the usual classrooms, or through standard apprenticeships, or on-job training, or on a farm.

This challenge was partially met by augmenting the facilities of existing hospitals. Arrangements were made with some schools and employers to provide spe- war service disability prevented them from getting cial facilities to accommodate these veterans whose about in the normal way.

At Old Farms Convalescent Hospital, Avon, Connecticut, the U. S. Army provided adjustment training for the veteran who had been blinded in the service—a program of orientation to his world of darkness. He learned to dress himself; to move about from one area to another; to feed himself and take care of all of the other daily needs that require no second thought from those of us who have our sight. Early in the program, the VA made arrangements with this hospital to begin vocational counseling. Through liaison representatives, we even provided certain vocational adjustment training. This included tryouts with some of the business concerns in the Connecticut area.

Similarly the VA worked with men at many of the other Armed Service Hospitals prior to their discharge —for example, men in wheelchairs at McGuire Hospital at Richmond, and with amputees being trained in the use of prostheses at Mare Island Naval Hospital.

Following release from the Armed Forces, many seriously disabled veterans are oriented to the vocational rehabilitation program of our Department of Veterans Benefits through the excellent Physical Medicine and Rehabilitation Services of our Department of Medicine and Surgery. The hospital team effort, through the Medical Rehabilitation Board and in collaboration with the veteran, helps him to clarify his objective, become aware of his potentialities and achieve optimum social, mental and vocational rehabilitation results. Vocational Rehabilitation and Education representatives from the regional offices participate as members of this Board when the patients have potential eligibility for vocational rehabilitation under Public Law 16. Through use of its paramedical specialties of industrial, physical, corrective, occupational, manual arts, and educational therapies, the Department of Medicine and Surgery endeavors to bring about a maximum physical and mental adjustment and a sound foundation upon which to build a vocational rehabilitation program. Some seriously disabled veterans are inducted into vocational rehabilitation training while on trial visits from our hospitals. In the Blinded Rehabilitation Section, the audiology, and speech correction clinics, the Department of Medicine and Surgery provides needed service prior to and during the time the veteran pursues vocational rehabilitation. Some of our seriously disabled veterans receive outpatient treatment in our hospital psychiatric centers while enrolled in courses of vocational rehabilitation. By team effort they are weaned away from the protective security of the hospital environment and helped to make progress toward greater self-reliance, devoting their energies to full-time courses of vocational rehabilitation designed to restore them to maximum employability.

As I said earlier, Congress did not wait until the war was over to provide for restoring our disabled servicemen to their optimum potentials and a useful life built upon their available abilities and strength. By V-E Day, May 4, 1945, 30,000 disabled veterans of World War II had already enrolled in courses of vocational rehabilitation. To date, more than 676,000 disabled veterans of World War II and Korea have been provided vocational rehabilitation training under the VA program. Of this group, 175,000 pursued courses in colleges and universities of higher learning. Some of these veterans were so disabled that the schools had to make extra provisions for them. Some were provided special parking areas near their classrooms. They rolled themselves from the area and into class in wheelchairs, brought to the school in collapsible form in their automobiles. Some schools built ramps to accommodate veterans in wheelchairs and those with serious ambulatory disabilities. Others arranged for special laboratory facilities for amputees— for reader service and other special adaptations for the blinded veterans.

Similar adjustments were made by schools below the college level, where another 175,000 veterans pursued training. Many trade schools put in special work benches and provided adaptations for hand and power tools used by paralyzed veterans and amputees. Employers also cooperated in installing modified work benches and providing adjustable stools and specialized equipment for some of the seriously handicapped among the more than 245,000 disabled veterans who pursued apprenticeship and other on-job training.

We have always felt it advisable to get the seriously disabled veteran into training and eventually into employment in places where the non-disabled pursues training and employment. To accomplish this has sometimes required special adaptations and special means of training. We not only have arranged with rehabilitation centers, work adjustment institutes, or Goodwill Industries to provide certain types

of adjustment training but have been instrumental in having facilities of this nature add special programs. Through pre-vocational and adjustment training, these facilities have made possible the eventual enrollment of the seriously disabled veteran in a regular school course or placing him with an employer for training.

For some veterans the disability is so serious they not only are prevented from going to school or to the employer for training but cannot even get to a special facility. When the veteran cannot get to a place of vocational rehabilitation, we have followed a policy of taking vocational rehabilitation to him. Some of our most satisfactory rehabilitants are today operating businesses in their own homes. They are bookkeepers, accountants, electrical appliance repairmen, watch repairmen, job printers. And there are many other occupations engaged in today by veterans who at one time considered themselves forever damned to the life of an invalid.

Probably the greatest inspiration to our people comes through such experiences as seeing a paralyzed veteran operating a successful business from his paraplegic home—his neighbors coming to him for services, not just to help a disabled person, nor because of pity, but because he is a qualified technician providing a needed service in his community; inspirational, because in some cases these disabled persons had returned to their paraplegic homes following intermittent periods of hospitalization, had turned their faces to the wall and were unable to see any hope for themselves. They were a burden to their family and a source of pity to the neighborhood. But worst of all, they were complete failures in their own estimation. To see just one of these men become a self-sufficient, happy, tax-paying citizen, in a happy home and a happy neighborhood, is worth far more than the tremendous number of hours devoted by some of our people to motivating the veteran and his family to try, and in many cases, try and try again, to reach an employment goal. Their rehabilitation has been the result of teamwork, not only of responsible personnel of the Veterans Administration Departments of Medicine and Surgery and of Veterans Benefits, but also of whole communities where they live.

The seriously disabled are a small percentage of the total number of veterans, but in terms of what they have accomplished in spite of tremendous obstacles, they assume a large place in our vocational rehabilitation program. It has been necessary to find instructors who could train them in the technical side of their chosen professions or trades and inspire them to capitalize fully on their remaining abilities. Also the instructors have aided in obtaining the cooperation of the community to provide an outlet for the veterans' goods or services. These veterans have been a challenge to the Veterans Administration, the community and the family. But they have been even a greater challenge to themselves.

Let me illustrate. One such veteran is today a successful writer. He tells his story by saying that when he was first approached by a VA representative, he was asked what he had thought about doing something useful. He said, "I gave him both barrels" with the statement, "What in the Hell can I do? I lie in this bed 21 hours a day and if someone puts my clothes on, I sit in a wheelchair for three hours. I watch television and I count the cars that go up and down the road out there. Do you know anybody that wants to pay me to do that?" Through returning visits and motivation, the veteran came to the place where he said to himself, "What have I got to lose? I will have someone to talk with anyway." Tests showed that he had a fertile brain—a creative one. His first instructor was a high school English teacher and then later a professional writer took an interest in him. Because of his paralysis, he laboriously types his ideas. His instructor was a great inspiration to him. When he started writing his first stories, they were about his disability. His instructor told him they were interesting but that he should not try to publish them. She said that if he ever tried to capitalize on his disability to get a story published, she would have nothing more to do with him. Today he gives this philosophy credit for the inspiration that prompted him to look outside of himself for stories that have made him successful.

Another veteran came back from the South Pacific with a disability which caused his skin to harden and discolor. His face was swollen to such an extent his eyes were almost closed and he considered himself hideous-looking. He shut himself up in a back bedroom of his mother's house and would see no one. Repeated calls at the home and talks with the veteran's mother eventually resulted in an audience between the veteran and one of our vocational rehabilitation specialists. Today this veteran, who once had completely divorced himself from society, has his own business as a radio, television and electrical appliance repairman. He is a useful citizen in his community, a community that needs his services. The VA doctor who was the medical consultant in working with this veteran, states that the veteran's vocational activities have gone a long way in improving his physical condition. Although the condition of his face is far from normal, the spiritual uplift he receives through being

a contributing member of his community presents to the public a personality that overshadows the effects of his disability.

Throughout the length and breadth of the United States the rehabilitated disabled veteran is pursuing worthwhile employment as a tax-paying citizen. He is a member of our community, of our church, our Service Club, a member of our family. How many millions of dollars will he contribute to our economy, this veteran who has placed negative emphasis on disability and a positive emphasis on ability? No one knows. And certainly no one can ever put a price tag on the restoration of human dignity and its effects on the happiness of the veteran, his family, his community and his country.

For contributions to results such as these, the organizations represented at this conference have the thanks of the disabled veterans and the Veterans Administration!

WHEELCHAIR — Cont'd from P. 128
and the future development of the art of fabrication and fitting of the modern folding wheelchair for the benefit of our patients.

REFERENCES

1. Nyquist, Roy H., Manson, Morse P. and Romiti, Aldo S., Vocational Counseling Services Within a Physical Medicine Program of Total Rehabilitation. *American Journal of Physical Medicine*, 31:393-399, October, 1952.

EPI-HAB — Cont'd from P. 131
possibility of accidental injury—a major misconception.

As reported, over 80% of the respondents were concerned about the epileptic injuring either himself or someone else. An additional 4% of the employer respondents indicated that they felt the epileptic would lose excessive time from work.

As a part of the survey, an attempt was made to determine the respondent's image of the epileptic employee and how he compares with non-handicapped workers. The findings were quite startling. Only one of the 23 companies who either had employed epileptics in the past or presently employed them, expressed disappointment with epileptic workers. The one respondent complained that the epileptic drank excessively. All of the other 22 respondents reported that in areas of production, quality, safety, absenteeism, advancement, acceptance by fellow workers, and participation in company activities, the epileptic was the same or *better* than non-handicapped workers. A much higher percentage of the respondents who had never employed an epileptic rated him in a much more unfavorable light (high absenteeism, high accident, low quality) than those who had reason to know the epileptic.

From the analysis of the questionnaire, it was found that most of the industrial respondents, unfortunately classified the elipetic as presently engaged in janitorial work, shipping and receiving, material handling, or some other relatively unskilled job.

Insofar as Epi-Hab's experience is concerned, I previously indicated that some 95 Epi-Hab employees have been placed into private industrial employment. The efforts and energy expended in the placement of these people was generally directed to counteract the fears, biases and uncertainties that the individuals of the management team constantly flaunted at us.

Epi-Hab fortunately was in a position to use actual work records and the work experience of its employees to sell productivity. For example, when Authentic Furniture, a sub-contractor, decided to open its own assembly shop in Union City, N. J., they took the six epileptic employees working on their production items at Epi-Hab Long Island, along to their new plant. The personal experience of the president of the furniture company, the sales manager, the shop foreman and the comptroller in the Epi-Hab setting was largely responsible for the trust and confidence in accepting our employees. This type of placement has repeated itself many times and has accounted for the various placements made.

It is my opinion that it is not the chief executive of a company that needs persuading. The president has achieved his status and can be magnanimous in accepting and employing the epileptic, but the lead man or the shop foreman, or the assistant supervisor —these are the people who are personally involved in their own growth and in their own achievements and, therefore, have the greatest concern for the performance and productivity of the employee in their charge. The epileptic is much more of a threat to these subordinate personnel, and the fears and stigma surrounding epilepsy have a greater impact on these people than they do on the upper levels of the management team. Education and persuasion must be directed to the fellow employee and to the immediate supervisor if greater inroads are to be made towards changing the attitudes and prejudices in industry.

DR. DAVIS TO TEACH-IN EUROPE

Dr. John E. Davis, executive director of the Association for Physical and Mental Rehabilitation, has won a Fulbright teaching fellowship and will leave for Norway on or about October 1. Dr. Davis will be associated with the University of Oslo but expects to lecture in other colleges as well. The fellowship will be extended for about nine months. During the absence of Dr. Davis, Richard G. Fowler, president-elect, will carry out the responsibilities of the executive director.

MEDICAL REHAB – Cont'd from P. 133

ence, self respect, comfort, relief from boredom and despair. However, gainful employment may not always be feasible, and it may be necessary to settle for some lower goal.

In closing I would like to quote the following statement attributed to Tolstoy some years ago. "There are four things that men live by—work, play, love and worship." The fulfillment of these four requirements will lead toward a fuller life for handicapped and the aged among us.

WEIGHT LIFTING – Cont'd from P. 137

3. For endurance types of activity most programs consist of one to three sets of 8-12 repetitions.
4. In warm-up, one should use about 60 per cent of maximum and may use twice the number of repetitions in one set.
5. The specificity of exercise should be kept constant throughout the weight training program.
6. Some coaches feel that weight training is an extra type of training and that it should be done after the regular workout.

A period of questions and some answers followed the presentations by the speakers.

"From Other Journals"

Donald L. Rose, Observations on the Clinical Effects of Brief Maximal Isotonic Exercises. *Southern Medical Journal*, 52:1548-1553, December, 1959.

The purpose of this study was to attempt to produce an increase in strength in the normal individual and in patients by using isotonic exercises according to the principle of brief maximal exercise. The quadriceps was loaded by weights attached to the foot and contracted for 5 seconds, once a day, five days a week. It was found that the weight could be increased 1¼ lbs. each time, regardless of initial strength. This suggests neuromuscular rather than purely muscular factors are involved. A maximal ceiling appears abruptly at a level considerably above the initial maximal value. This appears to be related to fear of injury and hence is psychological. The strength thus developed persisted for at least two and a half years, even though the exercises were practically discontinued. It seems inconceivable that these exercises represent a response to effort; rather it appears that they are a learned act. Cross education may occur during such exercises, but no increase in muscle hypertrophy was observed. There was no sensation of fatigue, post-exercise stiffness, aching, or soreness after these exercises.

Editorial, Exercise Therapy. *British Medical Journal*, 5187: 1721-1722, June 4, 1960.

The strength and bulk of healthy muscle is increased by active exercise and the contralateral muscle also becomes stronger. The only way to increase muscle strength and endurance is by active voluntary movement. The precise method used is probably immaterial. Strength and endurance are of little value without co-ordination. Facilitation techniques in combination with p.r.e. may produce beneficial results in a wider group of disorders than could otherwise be influenced. Exercise therapy produces its best results in cases of simple disuse atrophy, since only normal muscle with an intact nerve supply is present. Good results are obtained during recovery from denervation and after poliomyelitis. Exercise during rheumatic disease may be harmful. Strength can be increased during muscular dystrophy, but the progress of the disease neutralizes any improvement. In motor-neurone disease the sole effect of exercise is to correct disuse atrophy. In disseminated sclerosis strength may be increased only during periods of remission. In poliomyelitis and certain forms of neuropathy recovery may be hastened by exercise. The patient's cooperation in therapeutic exercise can be achieved more easily if the form of exercise is interesting and there is an end product of some sort.

Flemming Bonde Petersen, Muscle Training by Static, Concentric and Eccentric Contractions. *Acta Physiologica Scandinavica*, 48:406-416, 1960.

Twenty-four adult females and 23 adult males were trained as follows:

- Group I (5 f. and 5 m.) trained the right elbow flexors and right knee extensors on 36 occasions with 1 maximum isometric contraction per session. No increase in isometric strength resulted.
- Group II (4 f. and 6 m.) trained the same muscles with 10 maximum isometric contractions per day on 36 occasions. The males increased isometric strength significantly but the females did not.
- Group III (4 f. and 2 m.) trained the right elbow flexors with 10 eccentric contractions per day on 36 occasions. No increase in strength resulted.
- Group IV (4 f. and 4 m.) trained for 15 minutes on an ergocycle on 20 occasions. A significant increase in strength resulted.

A control group (7 f. and 6 m.) showed no change.

The results failed to confirm Hettinger and Mueller's work. Their results are dependent upon an experiment where the same instruments are used for training and testing, and may be attributed to an improvement in skill. The number of subjects is important in evaluating the statistical results. Since Hettinger and Mueller used a single subject, some question must remain as to the validity of their conclusions.

Irma Astrand, Per-Olof Astrand, Erik Hohwu Christensen, and Rune Hedman, Intermittent Muscular Work. *Acta Physiologica Scandinavica*, 48:448-453, 1960.

A single individual performed a given amount of work on an ergocycle within one hour, with work and rest periods of 0.5, 1, 2, or 3 mins. Mechanical efficiency was highest with continuous work, and the work was considered relatively light by the subject. Efficiency decreased and the stress of work increased as rest pauses became longer. By use of short work and rest periods one can train large muscle groups without overloading the circulatory and respiratory systems; by use of longer periods a training effect on circulation and respiration can be obtained. Older workers can perform heavy work if they choose suitable work and rest periods, but may be eliminated if the work rate is set by a machine. Work rests based on caloric consumption may have an entirely different physiological basis. It has been suggested that lactic acid is eliminated during the rest pause, but it seems more likely that less is formed during shorter work periods. This means the energy is liberated aerobically, and must depend upon the amount of O^2 in the muscle when work starts. In such case myohemoglobin has a role as an O^2 buffer in muscle, being recharged during relaxation.

Catherine Worthingham, The Development of Physical Therapy as a Profession Through Research and Publication. *Physical Therapy Review*, 40:573-577, August, 1960.

Historically, therapists are technicians but aspire to professional status. Calling themselves a profession does not entitle them to professional status. To be professional, members of a group must possess a body of knowledge that is identifiable and different from that of other professions, and must assume responsibility for adding to that knowledge. The growth of a profession is in proportion to the growth of the body of knowledge. Knowledge is developed through research. Research involves a critical examination of our sources and ways of learning what we describe as "facts." The "how-to" orientation of therapists must shift to "why?" It should be required that every professional student do at least one piece of research. If therapeutic procedures are to be removed from the realm of empiricism, it must be through the presentation of facts and principles in the literature. A group must develop its own literature and this must reflect steadily increasing standards of excellence.

N. N. Iakoviev, *et al.*, The Development of Strength, Rapidity of Movement and Endurance in the Course of Training in Various Forms of Athletic Activity. *Sechenov Physiological Journal of the U.S.S.R.*, 45:11-19, 1959.

Skiers, whose training was for the development of endurance; runners, whose training involved the development of speed; weight-lifters and gymnasts, who exert great strength; and basketball players, who receive all around training, were compared before and after training. It was found that training for endurance promotes development of that quality, but has little effect on speed or strength. Training for strength promotes development of that quality, with some increase of speed, but a negative effect on endurance. Training for speed increases speed, strength, and endurance. Basketball promotes the development of all of these qualities, but to a lesser extent than training directed specifically at any one. (Translated by R. Crawford)

Unless noted otherwise, all abstracts have been prepared by Philip J. Rasch, Ph.D.

Chapter Activities

California-Nevada Chapter

The spring meeting was held at the new Ben R. Meyer Rehabilitation Center at the Cedars of Lebanon Hospital in Hollywood. Tom Brown, chief corrective therapist at the Center, acted as program chairman. Chief speaker was George F. Seacat, Ph.D., Chief, Psychology Service at Wadsworth, Dr. Robert A. Katz, associate director, and Severing Grabin, coordinator, of the new Center.

Newly elected officers of the chapter include: James Ford, president; William Koos, first vice president; Evangelo Gerontinos, second vice president; Richard Barr, secretary, and David Portillo, treasurer.

Central States Chapter

The Central States chapter of APMR (formerly Ohio-Indiana-Kentucky chapter) held its fall meeting in joint sessions with the Ohio Valley chapter, AART, and the Tri-State chapter, AMRDC at the Veterans hospital in Chillicothe on September 16 and 17. The conference adopted the theme, "Community Resources in Rehabilitation" with John B. Murphy as program chairman. Dr. Henry Luidens, Director of the Department of Mental Hygiene and Correction, State of Ohio, delivered the keynote address.

During the first day, panels discussed "General Considerations for the Utilization of Community Resources in Rehabilitation"; "Current Trends of State and National Agencies in the Role of Community Rehabilitation"; and "Current Trends in the Role of Local Agencies in Community Rehabilitation." Among the panelists were: Collins W. Burnett, Ph.D., and Walter Ersing of the faculty of Ohio State University; Thomas J. Clark of the State's department of mental hygiene and correction; Charles E. Brashear of the Bureau of Vocational Rehabilitation; Lincoln Lenzi, president of the local United Fund organization; Nelson Kettle of Goodwill Industries; Dr. Richard B. Heintz and Kenneth McCormick, Ph.D., both of the VA hospital, Chillicothe. During the evening, over 50 persons attended the banquet and heard Mr. Lawrence Heightsman deliver an address on the "Economic Values and Potentials of Rehabilitation." The second day was devoted to a workshop under the direction of Robert W. Halliday, Ph.D., vocational counselor at Chillicothe.

Book Reviews

Classics of Medicine and Surgery, collected by C. N. B. Camac. (New York: Dover Publications, Inc., 1959. 435 pp. $2.25. Paper.)

This collection was originally published in 1909 under the title *Epoch-making Contributions to Medicine, Surgery and the Allied Sciences.* It contains the following papers, Lister, *Antiseptic Principle of the Practice of Surgery;* Harvey, *Motion of the Heart and Blood;* Auenbrugger, *Percussion of the Chest;* Laennac, *Auscultation and the Stethscope;* Jenner, *Inquiry into Smallpox Vaccine; Further Observations; Continuation of Observations;* Morton, *Administering Sulphuric Ether;* Simpson, *A New Anaesthetic Agent,* and Holmes, *Contagiousness of Puerperal Fever.* With them are photographs, short biographical sketches, lists of writings, reproductions of pages from the original editions, and similar material. The works presented fall almost entirely out of the area of physical medicine and will be of little interest to the corrective therapist. Historians may find it a convenient compilation.

PJR

Experiments and Observations on the Gastric Juice and the Physiology of Digestion, by William Beaumont. (New York: Dover Publications, Inc., 1959. 279 pp., $1.50. Paper.)

Corrective therapists will recall from their physiology courses the story of Alexis St. Martin, "the man with a lid on his stomach," and the pioneer observations of his digestive processes made by his physician, William Beaumont. Beaumont's original text of 1833 is here reproduced in facsimile. The material is, of course, of concern primarily to historians. In this connection it is of interest that the Canadian Physiological Society has recently announced that a special committee, after a three years' search, finally succeeded in locating St. Martin's grave.

PJR

The Clown Family Speech Book, by Morris P. Pollock and Miriam S. Pollock. (Springfield, Illinois: Charles C. Thomas, 1960. 38 pp. $6.50.)

The introduction presents a short but clear explanation of speech and a need for its accurate development and use. The book is nicely illustrated in black and white pictures. The approach is a listening-speaking one, and it is geared for children between the ages of four and eight years. A skillful teacher may vary this age level a bit, and she will find the book to be sound in its aim and fun in its approach.

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PLEASE PATRONIZE

OUR ADVERTISERS

Creative Variations in the Projective Techniques, by Molly Harrower, et al. (Charles C. Thomas: Springfield, Illinois, 1960. Pp 138, $8.50.)

With increased validation and acceptance of the projective techniques as diagnostic tools by the psychiatrist and psychologist, the authors of this book present one of the newer approaches to psychotherapy, using projective techniques in counseling procedures for individuals and groups.

Section One explains Harrower's approach to therapy, using projective counseling as a method of inducing insight through the confronting of the subject with his own projective productions. It is a technique useful for those persons not yet seriously incapacitated emotionally.

The second section introduces the new psychotherapeutic technique of Vorhaus, "The Structured Interview Technique." Using the Draw-a-Person test as the basic tool, the interviewer outines specific questions regarding the "other person" and then the same questions are asked regarding the subject. From material thus elicited regarding-self and "make-believe person," inter and intra-test comparisons, and an attempt to evaluate the ego-identity struggle are determined. The interview is then compared with the Rorschach findings and a program of therapy is developed upon basis of the structured interview (projective) and Rorschach interpretation.

The final section "Interaction Testing" presents a technique for the psychological evaluation of small groups and introduces the additional procedure of group testing with the same tests (Rorschach, T.A.T., Wechsler-Bellevue) as were used individually with the requirement that the group —as a group arrive at test responses. The comparison of individual versus group responses is termed "Interaction Testing."

To the psychiatrist, psychologist, and others who may be doing therapy this book presents a new approach in the use of projective test materials as an aid to a more adequate structuring of the psychotherapeutic interview.

DCL

Man's Posture: Electromyographic Studies, by J. Joseph. (Springfield, Illinois: Charles C. Thomas Publisher, 1960. 88 pp. N.P.)

The author's name should be familiar to most readers of this *Journal,* since he has published a number of studies of posture in the *Journal of Physiology* and elsewhere, mostly in collaboration with A. Nightingale, some of which have been summarized in our *From Other Journals* columns. Joseph points out that there are two main schools of thought about the way in which posture is maintained. One, represented by *Gray's Anatomy,* holds that it is the result of balance between opposing muscle groups; the other emphasizes the relation of the line of weight to the joints of the lower extremity. Joseph's studies lead him to favor the latter explanation. Like many other modern physiologists, he rejects the idea that muscle tone represents a minimal sustained contraction produced by action of a few motor units. He suggests that it should be discarded entirely, but if retained should be used only to refer to the action of skeletal muscles under certain conditions of stretch.

The book is short, easy to read, and should be of interest to all those concerned with the maintenance of erect posture.

PJR

Yoga: A Scientific Evaluation, by Kovoor T. Behanan. (New York: Dover Publications, Inc., n.d. 270 pp. $1.65. Paper.)

This is a reprint of a book first published in 1937. Unhappily, the report of the actual scientific work undertaken by Behanan comprises only part of one chapter, by far the greater portion of the text being devoted to yogic philosophical and psychological concepts. More recent studies by Bagchi, Wenger, Rasch, and others have extended the scientific investigation of this subject far beyond the point where Behanan left it, but the book is still of interest as representing one of the first attempts to apply scientific techniques to the evaluation of the results of the practice of this discipline.

PJR

Completed Research in Health, Physical Education, Recreation, compiled by Alfred W. Hubbard and Raymond A. Weiss. Volume 2. (Washington, D. C.: A. A. H. P. E. R., 1960. 76 pp. Paper. $1.50.)

The review given Volume 1 of this publication in the March-April, 1960 issue of this *Journal* could be used almost verbatim for Volume 2. The principal difficulties are still an inadequate coverage of the literature and a failure on the part of the colleges and universities to submit abstracts of work done on the master and doctoral level. Several more or less minor errors are apparent on even a casual reading. The name of the co-author is missing in item B258: the date for B273 should be 1959; in B310 "Pyrimidiul" should read "Pyrimidine," and the page should be 798 instead of 789; in B342 "Constitutes" should be "Constituents." In T43 "last" presumably should be "least," and Henry will certainly shudder at the statement that the subjects "closely approached a significantly greater gain." Somewhat similarly, T413 does not state whether the observed gains were statistically significant.

Nevertheless, the authors are doing a job that is badly needed and every one in the field of health, physical education, and recreation owes them support and encouragement.

PJR

Physiotherapy for Foot Ailments, by J. Harding Stirling. (Baltimore: Williams & Wilkins Company, 1960. 71 pp. $3.00)

Although other authorities can be expected to differ on some of the details and points of emphasis in this book on chiropodical physiotherapy by an eminent British chiropodist, it is a worthwhile introductory text. The author feels that message and manipulation are the basic and main modalities of foot physiotherapy, to be followed by exercises when indicated. However, no details are given nor much emphasis is laid on active movement.

This is a practical "how to" book on the technique of massage, manipulation, galvanism, and iontophoresis, as well as low volt and short wave therapy. Certain of the equipment discussed is of an older type than that in current use in this country. There is little discussion on the conditions treated and an absence of offered evidence to support the therapy advocated. Nevertheless this book should be of interest to all who are concerned with the conservative approach to foot care.

DJS

Structure and Function of the Body, by Catherine Parker Anthony. (St. Louis: The C. V. Mosby Company, 1960. 144 pp. $3.00.)

This is described as "a 'self-help' book written primarily for students in practical nursing programs." Presumably this refers to students who have no background in the sciences and who are not expected to attain a professional status. Certainly, it is not designed for corrective therapists or other readers of a journal such as this. The book is simplified to the point that it could probably be used successfully in a grammar school. It is profusely illustrated and contains a glossary and an index.

PJR

Source Book of Medical History, compiled by Logan Clendening (New York: Dover Publications, Inc., 1960. 685 pp. $2.75. Paper.)

This is a reprint of a book originally published in 1942. As the name indicates, it contains selections taken from medical literature through the ages, ranging from Egyptian papyri to Wilhelm Conrad Roentgen. Clendening supplied introductory notes to each section or author. Books of this type find their greatest use as reference texts in classes in the history of medicine. The material covered is so diffuse in nature that it is seldom of much value to those interested in a particular field. In this case there seems to be no mention even of physical medicine.

PJR

Science and Medicine of Exercise and Sports, edited by Warren R. Johnson. New York: Harper and Brothers, 1960. 740 pp. $12.00.

Physical educators in general—and corrective therapists in particular—suffer from the fact that they are a quasi-profession, having no discipline to call their own. Instead, they must rely largely on the work of scientists in such related fields as physiology, psychology, physical anthropology, nutrition, and medicine for the materials with which they work. Editor Warren Johnson's goal was to have prominent indiviuals in each of such related fields bring together their specialized knowledges of data bearing on the field of exercise and athletics and to present it in a form suitable for quick and easy reference.

The book is divided into six sections, covering body mechanics, physiology, maturation, psychology, cultural and historical aspects, and therapeutic aspects. Forty-two contributors are represented, of which 13 are Fellows of the American College of Sports Medicine. There are variations in style, of course, but most of the articles resemble the papers presented in *Physiological Reviews*, that is they offer both a summary and a detailed guide to the literature, something which the graduate student in particular will find extremely useful.

In several chapters the reader will be puzzled by the absence of rather obvious references. For instance, the one on anthropometry contains no mention of Humphreys; Behnke; Rathbun and Pace; Cowgill, Rees and Eysenck; Osserman; Parnell; Krogman, and others. Wesson discusses the physiological effect of exercise on the kidney, but makes no reference to the medical studies of Amelar and Soloman; Barach; Boone, Haltiwanger and Chambers; Gardner; Selman and Gualano; Flood, Alyea and Boone; Morgan, Tichwell and Ryan; Alyea and Parish, and others whose work is of primary interest to the physical educator and the sports physician. Similarly, Riley's article on pulmonary function ignores Gordon, Levine and Wilmaers; Peabody and Wentworth; Schneider and Ring; Stuart and Collings, and others who have made studies of athletes. A rather peculiar situation exists in that Wessel and Van Huss treat of "Therapeutic Aspects of Exercise in Medicine" without making a single reference to corrective therapy, while the following chapter by McCloy deals exclusively with corrective therapy. The rationale for such a dichotomy is not apparent.

Offsetting such criticisms are some chapters which are outstanding. Loofbourrow's material on "Neuromuscular Integration" is one of the clearest presentations of this complex subject the reviewer has ever seen. His description of the gamma system is especially good. The attention of the corrective therapists in neuropsychiatric hospitals is especially directed to the chapters by Emma Lyman and Cofer and Johnson, which are concerned with the effect of activity on the personality, and which introduce a tremendous field for research by corrective therapists. Ulrich's discussion of stress is an excellent introduction to an area whose importance is only beginning to be appreciated. Most of the other writers also appear to present workmanlike discussions of their subjects. It would be unfair to make comparisons, as no reviewer can be equally familiar with all fields. However, names like Gellhorn, Taylor, Brouha, Buskirk, Dill, Norris, Shock, and Espenschade speak for themselves.

For the most part this book presents a fairly detailed survey of our knowledge as it stands today in several areas of particular interest to physical educators. Here is the foundation on which future contributions must be erected. Every college and hospital library and every graduate student in physical education and allied fields should consider it essential to have a copy in their/his professional library. It appears certain to be *the* reference manual during the next several years.

PJR

Active Alerted Posture, by W. E. Tucker. (Edinburgh: E. & S. Livingstone Ltd., 1960. The Williams & Wilkins Co., Baltimore, exclusive U. S. agents. 64 pp. $3.00.)

It is Tucker's thesis that the normal relaxed standing posture sets up postural stresses which may become progressively damaging over the years and is in itself vulnerable to injury. He concludes that a more dynamic posture, which he terms Active Alerted Posture, is required. This appears to be a slightly flexed "position of readiness which primitive man or animals adopt in preparation for flight or fight." Such statements as this, and the claim that emotional problems are often relieved by the adoption of proper posture certainly require documentation. Tucker cites rising on the toes as a second class lever, with no mention of the fact that such authorities as Basmajian and Kranz would certainly not accept this. For some reason, the drawing of the "right" way to lift shows the lifter on his toes! On p. 38 a date is given at 1944; it appears as 1949 on p. 43. The book is illustrated with drawings and possesses an index. The audience at whom it is directed is not clear, but it appears to offer but little to the corrective therapist.

PJR

Lectures in Aerospace Medicine. (Brooks Air Force Base: School of Aviation Medicine, 1960. Offset. Looseleaf.)

As the title suggests, these are reports of lectures delivered at the School of Aviation Medicine, USAF Aerospace Medical Center (ABT) during the period 11-15 January, 1960. Some 22 papers are presented, dealing with such topics as celestial bodies, radiation in space, space flight dynamics, space logistics, personnel problems, and research programs. Illustrations accompany some of the articles. This is probably the most reliable and most detailed source of information on space flight data available to those who are not cleared for classified material. It should be invaluable to science fiction writers, amateur astronomers, and space medicine personnel. Even for the layman, much of it makes fascinating reading.

PJR

On the Causation of Varicose Veins, by T. L. Cleave. (London: John Wright & Sons, 1960. Williams & Wilkins exclusive U. S. agent. 38 pp., $2.50.)

"Man is what he eats" is not the usual way to describe the etiology of varicose veins. The author of this monograph, however, attempts to establish a nutritional cause for this prolbem by concluding that the body is not made wrong, but the anatomical basis which allows varicose veins to develop is an adaptive one and is therefore correct. Another factor is needed to explain why they occur to such degree, and with increasing frequency. This additional factor he attributes to stasis in the colon, the result of diet. By mechanical means affecting an otherwise normal anatomical situation, this produces pressure on the venous return, leading to varicocele, varices of the lower extremity, hemorrhoids, and femoral thrombosis in the bedridden. Logical application of Darwinian thought is used by Cleave to present convincingly his theory of ascribing the colon stasis to a nutritional factor resulting from the removal of fiber from the diet by use of refined flour and sugar in the western diet. This book should prove to interest to anyone concerned with the preventive aspects of health.

MLB

Foundations of Physical Education, by Charles A. Bucher. (St. Louis: C. V. Mosby Co., 3rd Edition, 1960. 501 pp. $6.00.)

This is a book which presents much useful and informative material not usually found in texts of this nature: the chapter on professional organizations should be especially valuable to the undergraduate student. The material is presented from the realist point of view and is consistent with this philosophy throughout. The only obvious weaknesses are in the illustrative material and a list of eighty-one "misconceptions of physical education." There is an overabundance of photographs taken at military installations and others have little relation to the textual material. Many of the "misconceptions" listed are in reality statements of fact. However, Bucher has written an up-to-date text which presents a comprehensive coverage of the field of physical education, and it is to be recommended to all physical education students.

WRP

CORRECTION

In the July-August, 1960 issue of the *Journal*, the footnotes designating Carl E. Klafs, Ph.D., and Carl Haven Young, Ed.D., in the article, "Projecting Curricula Development in School and Hospital Situations" p. 98, were transposed. Dr. Klafs is Assistant Professor of Physical Education at Long Beach State College. Dr. Young is Professor of Physical Education at the Univ. of California, Los Angeles.

In the article by Drs. George L. Beckner and Travis Winsor, p. 106, the meeting referred to in the footnote was held at the *Univ. of So. California* rather than at the Univ. of California as stated.

The Journal regrets these errors.

News and Comments

ELECTRIC STIMULATION AIDS HEMIPLEGIC GAIT

Leaning heavily on his cane, the patient shuffled down the hospital corridor. At each step his left foot dragged on the floor in the characteristic drop-foot gait of hemiplegia —paralysis of the body on one side. He paused for a second to turn on a small transistor electric stimulator carried at his belt. At once he began walking more precisely, the halting gait noticeably improved. The drop-foot, without a brace, no longer was scraping the floor. Indeed, it was lifting almost smartly.

"Now, I'll walk without a cane," he said. And did.

The patient was one of several at the Veterans Administration hospital in Hines, Ill., who have been testing a new concept of physical medicine treatment, known as functional electrotherapy, which could well benefit hundreds of thousands of similarly afflicted persons in our country today. Hemiplegia usually is the result of hemorrhage or blood clots in the blood vessels of the brain and often is a problem of old age. In a hemiplegic, peripheral nerves are not damaged but simply do not receive adequate impulses from the nervous system.

With the aid of a brace, a hemiplegic walks after a fashion, and many patients will have to continue to use such devices. However, when a hemiplegic uses a brace his muscles are not adequately exercised. This is why physicians are trying new ways to correct the hemiplegic's gait while exercising his muscles electrically.

Electrical stimulation has long been used in physical medicine to prevent atrophy or to increase the strength of muscles in such victims of paralysis. But Dr. W. T. Liberson, chief of the physical medicine and rehabilitation service at the Hines VA hospital, furthered the concept of functional electrotherapy. The drop-foot of the hemiplegic, in which the muscles which normally lift the foot to permit normal walking cannot do so, received his first attention.

Dr. Liberson, in effect, intermittently replaced the usual metal brace with one of electrical stimulation to provide a substitute nerve impulse for reactivating the dorsiflexor muscles of the foot.

His problems were numerous.

Electrical stimulation could be painful. He overcame this by curtailing the duration of electric impulses sent through electrodes strapped to the thigh and the peroneal nerve. Very brief pulsations (less than one-thousandth of a second in duration) were found most satisfactory.

Another problem centered about the necessity of feeding in electrical impulses so as to produce a coordinated pattern of muscle behavior, plastic enough to meet the requirements of a swinging gait.

Dr. Liberson and his associates, mechanical engineer H. J. Holmquest and therapists Margot Dow and D. Scott of the PM&R staff, obtained the necessary synchronization of stimulation with gait by placing a switch in the patient's shoe. When the foot is on the floor the current is cut off. When the foot is lifted, the current stimulates the nerve, producing a vigorous dorsiflexion. The forefoot is literally lifted in a near-normal fashion by its own muscles.

Dr. Liberson made an observation, one he proposes to study at length, that after a training period with the electrophysiological brace the patient seems to acquire the ability of flexing the foot himself. One patient, for the first time since his injury, unconsciously crossed his legs while resting from treatment.

Beneficial after effects have been noticed for several hours following stimulation. The foot seems lighter, one patient said. However, Dr. Liberson stresses the fact that this study is still in a research stage. While the immediate benefits from the "electrophysiological brace" are indisputable, it remains to be seen how long the patients will be willing to use this artificial method of correcting their gait.

NEW METHOD DEVELOPED FOR STUDYING LUNG DISEASES

An improved method for studying the pathology of lung diseases has been developed by joint studies of Dr. Hollis G. Boren and Dr. Bernard J. Blumenthal of the Houston, Tex., Veterans Administration hospital and Baylor University College of Medicine and Dr. William Hentel and Dr. A. N. Longfield of the Albuquerque, N. Mex., VA hospital. Allowing for study of lung tissue in three dimensions, it offers a new approach to the unknown problems of pulmonary anatomy and pathology. The approach seems to be shedding light on the course of several lung diseases that, to date, have not been clearly understood.

At present, the research team is concerned with a number of lung diseases, especially emphysema and bronchitis. Studies also are underway to determine the exact method of cancerous change in the lung.

"Three-dimensional study of the lung will allow investigators to become familiar with the actual architectural pattern that has been relatively unknown to those who have studied lung anatomy and pathology by conventional methods," Dr. Boren said.

Key to the new method is fixing the lung specimen in an inflated state more closely approximating the natural state. A formaldehyde vapor is passed through the lung for five days during the time fixing occurs. To prevent deflation and shrinkage of the lung, as well as to allow complete drying, air alone then is passed through the lung for an additional seven days. The specimens obtained are dry, rigid, non-fragile, and inflated to a size closely approximating the living state. They may be studied almost in their entirety by cutting sections which can be viewed by stereoscopic microscopy or more conventional means.

The routine use of the new method may open important avenues of study to most pulmonary diseases, whether these be tuberculosis, bronchitis, cancer, pneumonia, pulmonary fibrosis, or emphysema. Another possibility is future studies of alterations of lung patterns with varying types of air pollution.

The four VA doctors were awarded the Billings Bronze Medal for their scientific exhibit on the work, "Pathology of Major Pulmonary Diseases as Demonstrated by Fume Fixation," at the June 13-17 Annual Meeting of the American Medical Association in Miami Beach, Fla.

PHYSIATRISTS WIN EXHIBIT AWARDS

The three top awards for scientific exhibits at the Third International Congress of Physical Medicine and Rehabilitation, held in Washington, D. C., August 22-26, went to Veterans Administrations physicians.

The Gold Medal, highest award, was won by Dr. W. T. Liberson of the Hines, Ill., VA hospital and H. J. Holmquest of Chicago, for their exhibit, "Electrophysiological Brace for Foot Drop in Hemiplegics."

The second award, the Silver Medal, went to Dr. Alfred Ebel, chief of physical medicine and rehabilitation at the Bronx, N. Y., VA hospital; Dr. Nicholas Panin, assistant chief of PM&R at the East Orange, N. J., VA hospital, and Dr. Milton Holtzman of Welfare Island, New York City, for their exhibit, "Anatomical Localization of Common Vascular Brain Syndromes."

The third award, the Bronze Medal, went to Dr. Harry T. Zankel, chief of physical medicine and rehabilitation at the Durham, N. C., VA hospital, for his exhibit, "Stimulation Assistive Exercise in Hemiplegia."

STUDY SHOWS NEW DRUG MAY HELP GERIATRIC PATIENTS

Oklahoma City doctors believe they may have a partial answer to the question of how to keep elderly people from wasting away. It is "19-nortestosterone phenylproprionate," sometimes shortened to "nandrolone phenylproprionate." which has been developed in Europe.

Dr. Philip Johnson, until recently chief of the radioisotope service at the Oklahoma City Veterans Administration hospital and an associate professor of medicine at the University of Oklahoma Medical School, said the new drug seems to be quite helpful to geriatric patients who chronically suffer from loss of weight, atrophied muscles, and poor appetite.

Studies completed by Dr. Johnson, Dr. Mervin Clark, chief of the medical service at Central State Hospital, Norman, Okla., and assistant professor of medicine at the University of Oklahoma Medical School, and Dr. Carl W. Smith, assistant chief of medical service at Central State Hospital and assistant professor of medicine at the University of Oklahoma, show the new drug to be useful in the building of muscle, gaining of weight and improving of nutritional status.

Dr. Johnson said doctors had known for some time that the male hormone testosterone is helpful in similar situations. It helps the body convert food into muscle and bone and aids in increasing the appetite. But, he pointed out, testosterone is a potent sex hormone. It may cause women to grow facial hair and upset the delicate chemical balances in youngsters. Efforts have been made in recent years to obtain the tissue-building qualities of hormones from synthetic compounds without their ill effects.

Dr. Johnson and Dr. Smith selected for their studies 48 women at Central State Hospital, Norman, Okla. The women ranged in age from 50 to 94. All were 20 per cent or more below their ideal weight.

Nandrolone phenylproprionate was given to one group of 12 for four weeks, to a second group of 12 for eight weeks, and to a third group of 12 for 12 weeks. A fourth group received no shots.

The women given the drug four weeks gained an average of 4½ pounds; the groups receiving the drug for longer periods gained from 9 to 10 pounds. Those who received the drug, Dr. Johnson said, "had increased appetite and a general sense of well being." No evidence of damage to the blood, the liver or other vital organs, which were checked carefully at intervals throughout the study, was found.

TRANSFUSIONS MAY LEAD TO CARDIAC ARREST

Further progress in establishing the cause and treatment of cardiac arrest, a dreaded complication of surgery, has been made by doctors at the Brooklyn, N. Y., Veterans Administration Hospital. A major factor, the research group feels, is "potassium intoxication" induced by massive blood transfusions.

If sudden heart stoppage occurs during surgery, it is often a lethal complication even though massage of the heart is instituted shortly after the standstill occurs, according to Dr. Harry H. LeVeen of the Brooklyn VA hospital. He and a team of research workers from this hospital and the State University of New York reported their findings in the June 18 issue of the *Journal of the American Medical Association*.

Their attention was focused on blood transfusions when they noticed that cardiac arrest occurred in several patients following massive transfusions.

Seeking to determine why life-saving blood transfusions caused fatal cardiac arrest, the researchers turned to studies in animals and followed the trail to the chemical element potassium. When blood is stored in the blood bank, a high concentration of potassium builds up in the plasma, Dr. LeVeen said. When massive transfusions are given, the quantities of this element administered may cause cardiac standstill. The group surveyed those cases of cardiac arrest which occurred at four large hospitals in the New York area. A total of 157 cases during the past seven years were found at these hospitals.

The cause of cardiac arrest in about one-third of the cases was directly attributable to blood alone, in the opinion of Dr. LeVeen. In an additional group of 18, transfusion contributed to the cardiac arrest but was not the sole cause, he said.

"In over 40 percent of the cases, massive blood transfusions played a role in the cardiac arrest," Dr. LeVeen concluded.

The group sought methods to prevent the increase in cardiac stoppage and found that careful monitoring of blood loss was extremely important.

Potassium is released from the liver during uncompensated hemorrhage, their report concludes. Careful monitoring of blood prevents this potassium release. Because the potassium concentration of fresh blood is low, the team advises the use of fresh bank blood in situations where massive transfusions may be necessary. During their research they also discovered that the use of digitalis and the avoidance of adrenalin were important factors in the treatment of cardiac arrest.

The VA is planning a broad study of cardiac arrest, to clarify the findings reported by Dr. LeVeen and other aspects of prevention and treatment of this condition.

VA ADOPTS 'HALF-WAY HOUSE' PLAN

The Veterans Administration will encourage establishment of "half-way houses" for recovering mental patients in communities where its hospitals are located, according to Dr. J. F. Casey, VA director of psychiatry and neurology service. A "half-way house" is a place where a patient can live outside the hospital while he is learning to readjust to community life. There is some supervision from hospital officials, but a great deal of the patient's activities are at his own discretion.

Dr. Casey said the number of the houses that can be set up will depend mostly on the reception the idea receives from voluntary and civic groups in the local communities, as the program will require their cooperation to succeed.

Each VA hospital manager will decide whether a "half-way house" is feasible in conjunction with his hospital, Dr. Casey said, but the plan is expected to be useful in helping return to normal life a large number of veterans now in VA mental hospitals.

Dr. Casey said it seems particularly suitable for some patients long hospitalized for schizophrenia—those whose condition has improved so that they do not need the care and attention of the hospital or a foster home, but who still require some help in making the final break from dependency. He said he believes the half-way houses would provide a favorable atmosphere for a transition period during which, with some aid from the hospital social worker or psychiatrist, the men could learn to live independently again.

For example, he cited the success of the two half-way houses for VA patients at Gulfport, Miss.; of The Portals (a community-sponsored half-way house in Los Angeles which has accepted VA patients), and of the many half-way houses in the psychiatric programs of Great Britain and countries in Europe. The Gulfport houses, begun by the staff of the VA hospital there in 1958, have developed with the aid of outstanding cooperation from the people of that area and thus have been able to operate at reasonable cost to the veteran.

Dr. Casey returned recently from a trip to Great Britain and Europe, where he studied methods of psychiatric treatment in use there.

NEW DIRECTOR OF MEDICAL EDUCATION APPOINTED

Appointment of Dr. Robert I. McClaughry of the National Academy of Sciences-National Research Council as director of medical education service for the Veterans Administration has been announced by the VA.

A former assistant dean of Wayne University's College of Medicine in Detroit, Dr. McClaughry has been associated in a professional capacity with the Division of Medical Sciences of the National Academy of Sciences in Washington, D. C., since June 1958. During the past year he served as director of the NAS-NRC staff engaged in reviewing the medical research program of the VA.

STUDY CHEMISTRY OF PARKINSON'S DISEASE

A search for some of the basic defects that occur in the brain in Parkinson's disease, a condition afflicting an estimated 500,000 older persons in the United States, is under way at the Durham, N. C., Veterans Administration Hospital. A medical team under leadership of Dr. Blaine S. Nashold, Jr., a neurosurgeon, is investigating the effects of drugs in a selected group of patients, in the hope that findings will lead to development of new and improved treatment methods for the disease.

Parkinson's disease, Dr. Nashold pointed out, is a complex phenomenon which involves several areas of the brain. It is complex in its symptoms, which may vary greatly from time to time in the same patient and from one patient to another. It usually is a progressive ailment, Dr. Nashold said. Victims generally are older persons, at an average age of 65, and the disease usually disables them for years.

Oral drug therapy has been used with some success over a period of years in treating such patients. However, in some patients it is now possible through surgical means to relieve the shaking or rigidity of limbs which are characteristic of the disease. The studies at Durham, Dr. Nashold explained, "are attempts to discover certain basic mechanisms in the brain by injection into that organ of specific drugs which have heretofore been suspected of affecting the neural processes." The drugs, injected locally in the brain, are acetylcholine chloride, oxyphenonium bromide and sodium chloride (salt).

If, as seems highly possible, Dr. Nashold explained, the symptoms of Parkinsonism are due to specific disturbances of the chemical behavior of portions of the brain, it seems logical that the best specific treatment would be one of a chemical nature. Heretofore, surgical treatment methods have relied on the destruction of the diseased portions of the brain through physical means—cauterization, the injection of alcohol, or use of ultrasound.

The Durham research workers have conducted their studies with injection of drugs in nearly 50 persons suffering from Parkinsonism. The drugs are of the group called neurohumors, which are found in neural tissue. These drugs are also designated as cholinergic or anticholinergic agents. The injections are made selectively in the globus pallidus and thalamus.

Dr. Nashold is on the staff of the Durham VA Hospital and is assistant professor of neurosurgery in the Medical School of Duke University.

WILL COORDINATE VA PSYCHIATRIC RESEARCH

Appointment of Dr. Samuel C. Kaim as chief of psychiatric research for the Veterans Administration has been announced by the agency. Dr. Kaim comes to VA Central Office in Washington, D. C., from the Coral Gables, Fla., VA hospital, where he was chief of inpatient psychiatry and neurology. He also was clinical assistant professor of neurology at the University of Miami.

In his new post, he will coordinate the VA's large-scale cooperative research on newer drugs in the treatment of mental illness, as well as the many individual studies by VA personnel in the psychiatric field.

Dr. Kaim's own research has included studies correlating the brain waves with blood flow and cerebral metabolism in multiple sclerosis; of the effect of tranquilizing drugs on brain waves, and of use of a newer tranquilizer, methaminodiazepoxide, in epilepsy.

DR. PARKIN APPOINTED

Appointment of Dr. Robert C. Parkin of Madison, Wis., as chief of professional training services in medical education for the Veterans Administration, in Washington, D. C., has been announced by the agency.

JR. VOLUNTEERS ENCOURAGED TO ENTER NURSING

Teen-age girls across the nation received a first-hand look at nursing as a career by serving as junior volunteers in Veterans Administration hospitals during the past summer. The VA offered them plenty to observe and do. The agency's system of 170 general medical and surgical, psychiatric, and tuberculosis hospitals operates the world's largest organized nursing service and assists in providing clinical experience to one of each ten professional nurses being produced by the country.

Indications are the junior program is succeeding in interesting a substantial number of young people in careers in the medical and related fields where personnel shortages exist for both private and government hospitals.

At the Temple, Texas, VA hospital, for example, six bright and pretty teen-agers have about decided to do something to relieve shortage of nurses, as a result of their experience as junior volunteers. The girls, who drive 56 miles twice a week from their homes in Cameron to Temple to help on the wards, have all indicated a desire to become nurses after they are graduated from high school.

Their chores include making beds, cleaning bedside tables, keeping fresh water handy in the wards, and doing shopping and errands for patients.

Information on how to become a VA hospital volunteer may be obtained from any of the agency's hospitals.

CALIFORNIA SPORTS MEDICINE GROUP TO HOLD FALL MEETING

The Fall, 1960 meeting of the Southwest Area Members of the American College of Sports Medicine will be held in the Varsity Lounge in the basement of the Physical Education Building at the University of Southern California (corner 38th and Hoover), at 8:00 P. M., Thursday, Sept. 29, 1960.

Following a short business meeting, Charles Aronberg, M.D., will speak on "Sports Medicine at the VIII Winter Olympics," illustrating his talk with colored slides of various events. He has promised to give us the "inside dope" on the famous oxygen incident.

John Cooper, Ed.D., will then show two short films: "Man in Motion," a historical depiction of the development of the study of human motion, and "Mechanics of Human Motion," a study of one phase of motion (throwing) recorded at 5,000 frames per second and with x-rays.

NAMH PUBLISHES NEW BOOKLET

People who are habitually belligerent, moody, anxious or suspicious are very likely suffering from an emotional illness, says the National Association for Mental Health in a new booklet, "How to Deal With Mental Problems." Other signs of emotional trouble listed are, "selfishness and greediness," "helplessness and dependency," "poor emotional control," "day dreaming and fantasy," and "hypochondria."

The booklet, written by the organization's public information director, psychologist Harry Milt, is co-sponsored by The Advertising Council as the featured item in its Better Mental Health Campaign. The new booklet replaces the popular brochure, "How to Deal With Your Tensions," in this project. It is being offered free in single copies to individuals who request it in response to public service advertisements appearing in newspapers, magazines and transit facilities and on television and radio. Address requests to Better Mental Health, Box 2500, New York, N. Y.

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Applications for examination for Certification in Corrective therapy through APMR are again available. Qualified personnel should write to:

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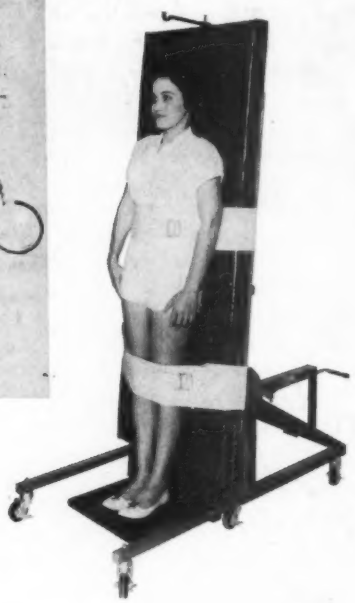

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